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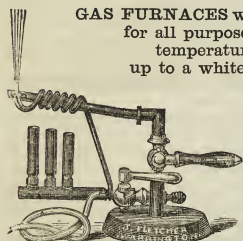
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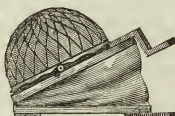


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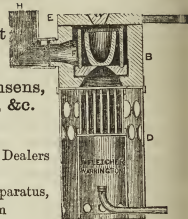
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Parliament has had several subjects of pharmaceutical interest under consideration during the past month. In the House of Commons the Irish Pharmacy Bill has been read a second time and reprinted with various modifications. The reciprocity arrangement has been omitted confessedly in deference to the opposition of British pharmacutists. "Pharmaceutical Chemist" is still left in the bill as the title to be given by the Irish Society, although, as we pointed out last month, it is the special creation and possession of the British Society. Mr. Thos. Cave, however, has given notice of several amendments with the object of substituting the word "dispensing" for "pharmaceutical" in that title, which we hope he will both propose and carry.

The Drugging of Animals' Bill has also passed its second reading, but its authors have removed from it all reference to the Pharmacy Act, and now propose simply to restrict the administration of certain drugs to animals, and not to interfere with the sale of the same.

On July 2, Sir Thomas Chambers made a spirited and forcible speech in the House of Commons against the principle of permitting Civil Servants to engage—not in co-operation—but in trade. The Chancellor of the Exchequer replied, and his arguments were generally supported by Mr. Goschen. Both of these right honourable gentlemen found it difficult to defend the system, which, however, it was clear they intended to support. Their speeches were followed by a brief but very pointed one in support of Sir T. Chambers from the other member for Marylebone, Mr. Forsyth, Q.C.

In the House of Lords the Sale of Food and Drugs Bill passed safely through committee without any material alteration, but on bringing up the report previous to third reading the Duke of Richmond intimated that he had been influenced to remove the word "knowingly" from clauses 3 and 4, but promised to introduce some other words which should meet the objections to that course.

A bill providing for the Registration of Trade Marks has passed through the House of Lords.

The Pharmaceutical Council, at its July meeting, was again occupied chiefly with Parliamentary matters. With regard to the Irish Pharmacy Bill the Law and Parliamentary Committee

reported that the reciprocity clauses having been withdrawn they had decided to withdraw their opposition to the bill. Mr. Mackay regretted that they had not also opposed the assumption of the title of "Pharmaceutical Chemist," but he feared that such opposition could not be resumed. Mr. Sandford, however, considered that, having informed Sir M. Hicks-Beach that they withdrew their opposition to the bill, they could no longer oppose it *in toto*, but he thought they were quite at liberty to aim at its amendment. He moved a resolution in support of Mr. Cave's amendment, which would substitute the word "dispensing" for "pharmaceutical" in the several clauses of the bill where the title is mentioned. The motion also expressed regret at the establishment of distinct boards of examiners. Mr. Savage seconded the proposal. Mr. Hampson thought such opposition to the mere title "Quixotic," while Messrs. Owen, Williams, Frazer, and Betty agreed that it would be "veracious." The other members of the Council, however, thought it worth while to protect the title, which, as Mr. Mackay said, from 1852 to 1868 was literally all the Pharmaceutical Society had in the form of special possession, and the motion was ultimately carried by 13 votes to 5. Another resolution, also moved by Mr. Sandford, appointing a deputation to the Duke of Richmond, in order to endeavour to prevent the erasure of the word "knowingly" from clauses 3 and 4 of the Sale of Food and Drugs Bill, was carried unanimously. The professors reported satisfactorily with regard to their several classes, and on considering their reports Mr. Schacht suggested the possibility of including among their educational provisions a "pharmaceutical laboratory," so that a student's education should not be considered finished until he had had the opportunity of making extracts, distilled waters, and other pharmaceutical preparations. The suggestion was referred to the Library, Museum, and Laboratory Committee.

According to a "Customs and Inland Revenue Act" passed on June 14, an important modification of the rates of patent medicine licenses has been made. Heretofore these have cost 12s. in London, 10s. in corporate towns, and 5s. elsewhere. Now 5s. is to be the uniform charge. The same Act provides that a foreign wine license shall cover the "sweets" license, and also permits licensed rectifiers or compounders of spirits to warehouse tinctures or medicinal spirits upon drawback.

The General Medical Council, on the invitation of Government, has been debating the fitness of women for medical practice. They conclude she is not fit for it, but they think it would not be politic to place difficulties in the way of her progress in that direction as far as she thinks proper.

The students who compete in our "Corner" have for some months past been exercised with alkaloids. They are now offered an adulterated Pharmacopoeia specimen to discover and describe.

Letters to Austria, Hungary, Belgium, Denmark, Egypt, Germany, Greece, Italy, Luxembourg, the Netherlands, Norway, Portugal, Roumania, Russia, Servia, Spain, Sweden, Switzerland, Turkey, and the United States may now be sent at the rate of 2½d. for half an ounce. The same rate will apply to France after January 1, 1876.

A German pharmacist has observed that salicylic acid is a useful addition to the water in which leeches are kept, preserving it in a sweet and clean condition. After several experiments he came to the conclusion that the most advantageous proportion was 20 drops of an aqueous solution of salicylic acid (1 in 300) to a litre of water, in which a hundred leeches were kept.

RASPAIL.

THE patriarchal portrait in this issue of THE CHEMIST AND DRUGGIST is that of François Vincent Raspail, the veteran chemist and politician, whose name has so frequently been prominent in France during the last half century.

M. Raspail is now in his 82nd year, having been born on January 25, 1794, at Carpentras, in the Department of the Vaucluse. His father, Joseph Raspail, was an inn-keeper or *aubergist* in very moderate circumstances, and was politically extremely attached to the Monarchical party. He had three sons; the two eldest embraced the military career, while the third, François, was destined in another way to acquire a great celebrity. It was intended that he should become a priest, and he was accordingly placed under the care of a learned abbé who happened to hold Republican opinions. In addition to his studies in the classical languages, he imbibed from his instructor philosophical ideas which bore fruit later on.

At the age of sixteen he was sent to the seminary at Avignon, and his close application to study and rapid progress led to his being named the following year (1811) tutor in philosophy, and in 1812 assistant professor in theology. This last position seems to have resulted in making Raspail a fervent disciple of the free-thinking school. Nearly sixty years after, when accepting the honorary presidency of the Society of Libres Penseurs of Lyons, he wrote: "I accept with enthusiasm the title, but on one condition—that all who belong to this society shall adopt for motto, 'Be born without priests, married without priests, buried without priests': honour and conscience, these embrace the only religion that nature has engraven on our hearts." As a medico-pharmacist he was as heretical as in theology, as we shall see during the course of our biography.

Raspail's public life may be said to have commenced in 1813, when he returned to Carpentras to take a chair in the college of that town.

The disastrous Russian campaign had just occurred, giving a great shock to the *prestige* of Napoleon. Raspail was requested by the mayor and curé to pronounce a discourse on the anniversary of Austerlitz, which task the young professor acquitted himself of with some hesitation and regrets; insisting, notwithstanding his repugnance to the despotic rule of the Emperor, on the necessity of rallying around him to defend the country from invasion. The young orator's efforts had a momentary effect in calming the public agitation, and when his speech was sent by the Préfet de the Department to Napoleon, the Emperor, on having read it, said: "Look after this young man: he is destined to rise."

Soon after the Bourbons returned, and Raspail looked on with an ill-concealed irritation at the resurrection of the *droit divin*, and with satisfaction in 1815, when this *régime* again went down. He turned political song writer at this epoch, and one of his compositions had a great success during the hundred days of the Emperor's return; but a little later, when the second restoration took place, the young professor was displeased, and for six months subsequently he was personally in great danger in consequence of his advanced political opinions.

A short period of enforced inactivity was therefore passed in his native town, but in 1816 he left Carpentras for Paris. At this time Raspail was 22 years of age. Being without resources, he tried to obtain a living by giving lessons, and succeeded in being admitted into an institution, and also into a college. From both he was soon dismissed in consideration of his advanced Republican opinions. He continued to gain a precarious livelihood for four or five years, actively occupied with politics meanwhile, and in 1822 he became a member of the Carbonari, and also found time to study law. Having passed his examination he entered the office of an advocate, but was soon disgusted with the profession and permanently renounced it to throw himself

with ardour, while continuing his lessons, into the study of the physical and natural sciences.

Carrying with him in his scientific researches his characteristic system of hardy investigation, Raspail published in several periodicals very remarkable articles on the *graminaceae* as well as accounts of very interesting studies in botany, paleontology, zoology, microscopic anatomy, chemistry, and medicine. In the year 1824 he made known to the Academy of Sciences the result of his discoveries on the *graminaceae*, of which he made a complete classification. His *mémoire* upon the subject, published in the *Annales des Sciences Naturelles* for 1825, brought him many encomiums from the scientific world. From this period to the year 1830 he published a series of studies of great interest on the various *feculae*. Becoming enamoured of the study of *les titres organiques*, he arrived at very remarkable results, although his poverty denied him the necessary instruments, and he was obliged to use an ordinary magnifying glass, and a few drops of reagents.

In 1829 he founded, in conjunction with M. Saigey, *Les Annales des Sciences d'Observation*, in which he published the results of his interesting investigations, and also sharp criticisms on the works of other *savants*.

In the revolution of 1830 Raspail joined the ranks of the combatants with his gun, and was wounded in the attack upon the Barracks Babylone, and afterwards received the decoration of July. Subsequently he was offered by the Government the position of Conservateur Général des Collections du Muséum. This post he consented to accept on condition that some radical reforms were introduced in the establishment; but it was impossible for him to come to an understanding about these changes with Cuvier. A little after he received the decoration of the Legion of Honour, but Raspail refused the Cross in a published letter.

Attached to the most advanced group of the Republicans, he became President of the Société des Amis du Peuple, and by his speeches in the clubs and newspaper articles aroused an active revolutionary campaign. In February, 1831, he was sentenced to three months' imprisonment for one of these articles, and in the month of January following he was charged, with several other members of his society, with exciting the people to the "hate and contempt of the Government" by their articles in the journal of the society. The jury acquitted him; but, having pronounced these words, "The citizen who asks of France fourteen millions to live upon should be interred alive in the Tuileries," the Court condemned him to fourteen months imprisonment and a fine of 500 francs. From the prison of St. Pelagie he was taken to Versailles with his hands manacled. These rigours only increased his popularity. He employed his leisure hours while in prison in writing a part of one of his best scientific works.

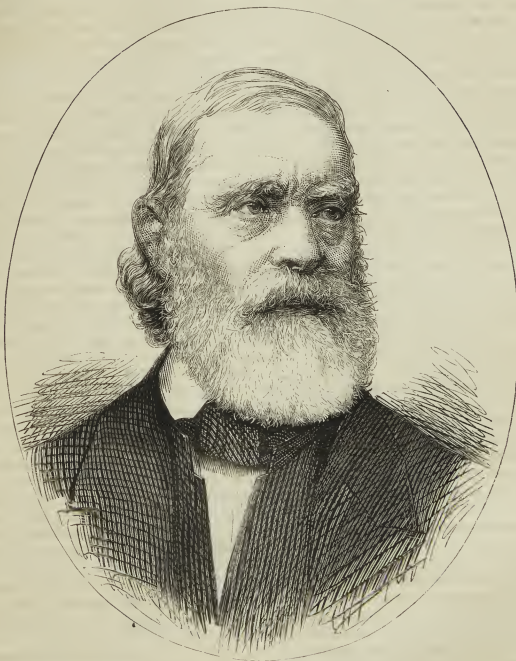
Shortly after he had recovered his liberty the Academy of Sciences thought of awarding him the Montyon prize of 10,000 francs (July 6, 1833), and the celebrated President, Geoffroy Saint-Hilaire, wrote him as follows:—

"My position requires me to award encouragement to all successful efforts in the work of scientific research, to be the active expression of all the members of this corporation. Who has more right to our encouragement as *savants* than you, who have just opened up new paths of research in discovering facts so important to future researchers, and in creating ideas so new and suggestive of others subsequently? I might have proposed a prize of 10,000 francs for the invention of sulphate of quinine: the usefulness of your researches, and their future influence, have a value inconceivably much greater."

This prize was not awarded to Raspail, it having been opposed by Guizot, who at that time was Minister of Public Instruction. Guizot is reported to have said: "I forbid you to fatten the cash-boxes of the *émeute*."

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.

XVIII.

*Raspail*

FRANÇOIS VINCENT RASPAIL.

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Some days after, Raspail, who presided in the place of General La Fayette at a meeting of Deputies of the Left, was arrested upon the charge of conspiring against the State, but was acquitted.

The following year he became editor in chief of the *Réformateur*, in which he promoted serious scientific and administrative reforms. During the following fifteen months the journal was successively fined to the amount of 115,000 francs, and Raspail expiated once more in prison for a few months the boldness of his language.

The subsequent dozen years were void of political events in the history of Raspail, except his imprisonment for six months for an alleged insult to the Court where a certain affair was being investigated. The Republican party being silenced during these years, Raspail re-applied himself with renewed ardour to his scientific investigations, which, by the way, had hardly been at any time interrupted. The works he had published had gained him a considerable reputation, especially abroad, where scientific men did not exhibit the same hostility to him as in France. In point of fact, his worth as a chemist was not contested. On several occasions he was asked to intervene in this capacity in the assize trials in poisoning cases. In 1839 he had, at Dijon, a very heated discussion in Court with Orfila in regard to poisoning by arsenic. The animosity of the two *savants* arose again in the celebrated case of Madame Lafarge, at Tulle, in 1840. Asked to verify the examinations of Orfila, Raspail failed to arrive in time, being delayed *en route*, to take any part in this great trial. He, however, on his return to Paris, wrote an article in support of the appeal of Madame Lafarge to the higher court, which, as well as other articles in the *Gazette des Hôpitaux*, had a great celebrity. Raspail asserted that Orfila had committed a grave error in not stating that the arsenic which he claimed to have found in the body of Lafarge was in reality derived from the nitrate of potass used in the experiments. This *memoire* was distributed to the Court, which only determined to reject the appeal on the ground that the principal proofs against Madame Lafarge were moral, not scientific.

A little time after Raspail was led to undertake the "reform of the medical art" with which his name has during the last generation been so prominently identified. He writes: "My researches have convinced me that most maladies arise from attacks of internal as well as external parasites, and of infection from their disorganisation. Also, I have in view the simplification of medical practice, even as I have simplified the theory. I cannot hit upon a better substance than camphor, with the double object of stifling the immediate cause of the ill, and to neutralise its effects." He divided all the causes of sickness into nine groups—the impurity of the air we breathe; defective assimilation of the aliments; the influence of the temperature; wounds; the introduction into the organs or tissues of either a venomous substance or other foreign matter, which operates as an obstacle to their continuity; the parasitic influence of insects and intestinal worms; and lastly, moral impressions. To each one of these groups he attached a series of hygienic prescriptions easy to carry out, and cheap.

Camphor became the base of his medication, and he prescribed it in powder, in grains and in cigarettes—mixed with lard as a pomade—with alcohol as an embrocation. To this he added other remedies, such as aloe and eau sedative, discountenancing the use of all poisons, which, he says, conquer one sickness only to create another. This medical reform was undertaken by Raspail, and fully treated of by him in his "*Médecin des Familles*" (1843) with a philanthropic object. He desired to extend among the people hygienic precepts and temperance, and to teach them to avoid costly remedies, oftentimes injurious. He desired to place it in the power of persons to prescribe for themselves at a small expense. To popularise his method Raspail issued in 1845 the

"*Manuel de la Santé*," of which he has since published annually a revised edition. This *brochure*, now grown to a thick volume of 450 pages, had a rapid success among the people, and even excited the jealousy of the medical profession, who, seeing disappear a part of their *clientèle*, and the gratuitous consultations of the author crowded, demanded his accusation for illegal practice of medicine, which was done on May 19, 1846, on the complaints of M. Orfila and that of M. Fouquier, the king's physician. The king's advocate demanded the application of the minimum sentence—a fine of one franc—"less to punish him than to force him to 'regularise' his position in the eye of the law."

Raspail defended himself, and, in an eloquent improvisation, exposed the principles which had always led him to refuse titles, honours and diplomas. The tribunal inflicted the maximum sentence, 15 francs fine.

Notwithstanding this, Raspail continued his free consultations in the Rue Culture-Sainte-Catherine, declaring that if he was again complained of he would not defend himself, but simply reply to the judge, "Yes, I have practised medicine illegally, but in a manner eminently moral; here are the fifteen francs fine, and I go back to my sick people." He continued his consultations until May 15, 1848, and afterwards in exile.

Raspail owes to the profits of his publication the moderate fortune which he has since enjoyed.

The well-known drug establishment which has existed so many years in the old Rue du Temple, Paris, under the title of the "*Maison Raspail*," is the commercial outgrowth of the pseudo-reformatory agitation of the subject of our sketch. A large business is done in the Raspail specialities, which are all supplied at very reduced tariffs compared with the ordinary prices of pharmacists. We believe that all the peculiar preparations are fully described in the "*Manuel*," with the formula for their preparation. The business is more especially under the conduct of M. Emile Raspail, who also directs a large laboratory and works, in which the various preparations are manufactured in quantities, at Arcueil.

The fall of the July Monarchy led Raspail to enter once more into the ardent political struggles of the epoch. On Feb. 24, 1848, he penetrated into the Hotel de Ville with the populace and proclaimed the Republic: the provisional government offered him public functions, which he declined to accept. On the 27th he issued the first number of *L'ami du Peuple*, with the motto "God and our country, liberty of thought, full and entire, unlimited religious tolerance, universal suffrage." Both in the clubs and in his journal he soon commenced attacks on the Provisional Government, which he accused of feebleness and indecision. He announced himself as a candidate for the Legislative Assembly, but was not elected.

On December 10, 1848, on the election of a President of the French Republic, Raspail received 36,000 votes. On May 15 previous he had, at the head of an immense crowd of the populace, carried a petition in favour of the re-constitution of Poland to the National Assembly, for which he was arrested and temporarily lodged in the fortress of Vincennes, and in the month of March, 1849, he appeared before the High Court at Bourges to answer for his acts on that day. He defended himself, but was condemned to six years' imprisonment, which he served in the citadel of Doullens. There he resumed his scientific studies, which led him to produce his meteorological system.

On March 8, 1853, the death of Madame Raspail, the worthy companion of his long and exciting struggles, took place. She was interred in Père la Chaise, Paris, the ceremony attracting at least 100,000 persons. Her tomb is one of the most dramatic and frequently visited of that cemetery. The following year the remainder of Raspail's sentence, two years, were arbitrarily changed to banishment. He retired to Belgium,

where he resided in a small locality near Brussels. Some years after the amnesty of 1859 he returned to France and fixed his residence on his own property at Arcueil-Cachan, near Paris.

In 1860 he was elected Deputy by the Department of the Rhone (Lyons, &c.).

In the Corps Legislatif Raspail connected himself with no group. He voted constantly against the propositions of the Imperial Government, and against the declaration of war. He published also some political articles at this time in the newspapers, written with his juvenile vigour.

After the revolution of September 4, he retired to private life, from which he was not to be induced afterwards to emerge, although solicited by the Republicans of Toulouse to allow himself to be placed in nomination for the National Assembly in October, 1873.

On February 12, 1874, Raspail was cited to appear before the Jury of the Seine, on the charge of having, in his *Almanach et Calendrier Météorologique* for 1874 made apologies for acts which are by French law denominated crimes. In the greater part of the events which he recorded, he recalled the influence néfaste of the Jesuits, who always, as well as the police, inspired the *savant* chemist with a certain horror. The same day he was condemned, notwithstanding his advanced age (81 years) to two years of prison and 1,000 francs fine. From this sentence he appealed: the Court at Versailles reduced it to one year, and permitted the term to be passed in a *Maison de Santé*, at Bellevue (near Meudon, one of the most charming sites around Paris), cared for by his daughter Marie, who became the self-constituted guardian angel of his old age. This term is, at the date of our writing, nearly, if not quite expired.

The preface to the 1875 volume (the 30th) of his "Manuel de la Santé" is dated Bellevue, January 8, 1875, and is characteristic of the veteran.

We quote: "It seems to me, my dear readers, that I bear around me (in the establishment which has been designated as the place of my imprisonment) a species of revival of the love of humanity and good actions which had become so much enfeebled in the mass of the people during the sufferings of those four unhappy years which the Empire left us on its extinguishingment. Why can I not inspire regenerated France with that fraternal love one class towards another which should result some day from the enjoyment of a noble and unlimited liberty—that liberty which has within itself such immense resources for the cure of temporary abuses. This wish, which I place at the commencement of this volume, is not a political one—*je ne déplace jamais les questions*: I confine myself to the limit which separates the morality of the public health and the other descriptions.

"You have not forgotten the magnificent medical and pharmaceutical revolution which this modest little book produced on its first appearance, and the constant and widespread success which it has always met with. The learned bodies themselves, generally so enured in the lava of their past traditions, will come some day to fully adopt our reformed doctrines, and it is said that at a sitting of our Academy of Medicine one of the speakers shook his chains, and amid the enthusiasm of the audience pronounced an anathema upon all the past history of what had been up to this time so improperly called the curative art (*l'art de guérir*)."

Speaking of the medical use of poisons, he says:—"We have shown in our practice that there is not a single ailment which our system cannot make disappear without the aid of these homicidal means, which seem in expelling one ill to implant in the system in its place others of a dreadful and oftentimes incurable nature by their corrosive effects."

And again, in regard to the latest revision of the French Pharmacopœia, he writes:—"By a decree, dated the 20th of June, 1861, the Empire brought the aid of its authority at that

time to the naming of a commission instructed to revise the *Codex Medicamentarius*, or *Pharmacopœia Française*, which is the authoritative work in the country. The Commission from the first showed themselves faithful to the principles which guide all these official groups of men, of which the number is not at all times a guarantee of their capacity.

"The eighteen members consumed five years at their work, and at the end the new *Codex* remained, in regard to progress, not in advance of that of 1837, which it was destined to replace, with the aid of a few words changed, and with a preface remarkable for pretentious obscurity in the construction of its phrases, by its repetitions at each page, and terminating with the noble wish which we now transcribe eight years after its appearance—*O tempora et Mores*—that it might be permitted to place under the patronage of the Emperor a universal work in the interest of the public health equal in its sphere to the other great projects designed and in process of achievement by His Majesty for the good of his people." And this was signed by such names as Rayer, Bouchardat, Tardieu, Wurtz, Bussy, &c. However, the universe thus appealed to turned a deaf ear to these great French doctors, astounded at this retrograde step to the time of Paracelsus, when official France took under its protection all those corrosive poisons which the "Manuel" and the followers of that school had proscribed since twenty-five years in their practice."

Raspail has been a most industrious writer: the enumeration of his works would be too lengthy for our limits; they have been sufficiently alluded to in the course of our sketch.

There are four sons of Raspail living, who are all imbued with his pronounced democratic ideas. Benjamin, the eldest, is a painter and engraver, and a member of the Conseil Générale of the Seine; Camille is a *Docteur en Médecine*, and continues his father's consultations in the Rue Carnot, Paris; Emile is an *Ingenieur-Chimiste*, and has founded important works and a laboratory at Arcueil-Cachan for manufacturing the special remedies of the *Méthode Raspail*; the fourth son, Xavier, is also a physician. Each of these sons have followed the traces of their father in politics, scientific work and literature. All are authors of several works of considerable practical value, and all have served their country as volunteers in the late war.

Abstracts of Foreign Papers.

POCKET MUCILAGE.*

Boil one pound of the best white glue and strain very clear; boil also four ounces of isinglass, and mix the two together; place them on a water-bath with half-a-pound of white sugar, and evaporate till the liquid is quite thick, when it is to be poured into moulds, cut and dried to carry in the pocket. This mucilage immediately dissolves in water, and fastens paper very firmly.

NEUTRAL TANNATE OF QUININE.

According to Rozsnyay, in the *Pharm. Centralbl.*, a perfectly neutral tannate of quinine may be obtained by adding to a solution of sulphate of quinine in boiling (not acidified) water a solution of tannic acid which has been made neutral with dilute ammonia, and mixing the two fluids. The proportion of quinine sulphate used to the salt of tannic acid obtained is as 1 to 2.5. The precipitate is quite without taste, much more soluble in water than the salts of quinine usually employed, and offers many other therapeutical advantages. A neutral precipitate cannot by any means be got from an acid solution.

* American Druggists' Circular.

AMYLNITRATE.

SPRINKING of this body, the *Pharmaceutische Zeitung* says that its applications are still circumscribed. It differs from amyl-nitrate in the following particulars: it has a higher specific gravity (0.919), a higher boiling point (147° to 148°), possesses a very disagreeable circular smell, and is colourless. The designations *Amylnitric* and *Amylnitrate* have so often led to mistakes in substituting one for the other that it is recommended to employ the names *Nitrite of Amyl* and *Nitrate of Amyl*.

103 FUSEL OIL IN ALCOHOL.

To detect this Bettelli, in *Gaz. Chim.*, recommends that 5 c.c. of the suspected alcohol be diluted with six to seven volumes of water, and the mixture well shaken with 15 to 20 drops of chloroform. By evaporation the separated chloroform leaves behind any fusel oil that may have been present, and the latter can then be recognised by its smell, and by etherification by means of a mixture of sulphuric acid and an alkaline acetate. In this way so small a quantity as .05 per cent. of fusel oil in alcohol may be detected.

THE PREPARATION OF MERCURIAL OINTMENT.*

The tedious process of the extinction of quicksilver has, as is well known, led to the employment of numerous expedients in the preparation of the above ointment, of which the best known are the addition of oxidised ointment, oil of almonds, linseed oil, turpentine, liquid storax, citrine ointment, benzoin, ether, balsam of Peru, rancid fat, old mercurial ointment, &c. Recently, Wallet, of Amiens, has prepared the ointment on "physical principles." Starting from the position that the greater weight of a larger bulk of quicksilver acts on the side of cohesion, he maintains that the problem to be solved in the preparation of mercurial ointment is the reduction of this action in favour of cohesion of the weight of quicksilver in the fat, and claims to have solved the problem by the gradual addition of the metal in quantities of about 50 grammes to the fat, kept constantly triturated. In his experiments Wallet has worked upon 1,500 grammes of mercury, adding it to the fat in 30 portions of 50 grammes each at intervals of about one minute, and after the whole was distributed, has endeavoured to procure its extinction, which took place in an hour and a half, so that the preparation of 3,000 grammes of mercurial ointment requires about two hours.

SALICYLIC ACID FOR PRESERVING LIME JUICE.

The following, which will be both new and interesting to many, is communicated to the *Pharmaceutische Zeitung* by Niemer, a pharmacist of Münster. It is too well known that the preservation of recently expressed lime juice is a great difficulty to pharmacists. According to two experiments, 0.25 of a gramme of salicylic acid will prevent the development of fungi in three pounds of fresh lime juice, the latter being in a half-filled flask. A trial made under similar conditions, but without the salicylic acid, resulted in the formation of mould in ten days. It was also found that cream which refused to churn could readily be made to do so by the addition of a very small quantity of this acid.

CHLORAL HYDRATE.†

On this body Professor König writes as follows: The narcotic power of chloral hydrate is increased to an important extent, and its prejudicial effects reduced in the same proportion, if bicarbonate of sodium be administered immediately before. After five observations I believe myself to be in a position to state that 1 part by weight of chloral hydrate may be replaced with equal effect by 1 part of bicarbonate of sodium and 0.4 part of chloral hydrate. Since, calculated from the average manufacture of chloral hydrate, more than a hundred thousand

persons daily use the sleep-producing medicine made known a few years ago by Professor Liebreich, some may find it both useful and interesting to test my conclusion, which was indeed probable from theoretical considerations.

ON A NEW BODY FROM "HEDERA HELIX."

By Dr. F. A. HARTSEN.*

Hedera Helix is a chemically interesting plant. Several peculiar substances have been obtained from it, notably *hederic acid* and *hedera-tannic acid*. For further information on these points the reader may turn to Huseman's *Pflanzenstoffe*.

The bitter substance called *hederin*, which is regarded as an alkaloid by some chemists, would seem to be no other than the bitter tasting *hedera-tannic acid*.

In the south of France *Hedera* is much used for washing purposes and as an addition to baths.

As a secondary product in the preparation of chlorophyll from *hedera* leaves Dr. Hartzen obtained a body which for a long time he took for a fatty acid. It presents strongly the peculiarity that it is precipitated by common salt from a saturated aqueous solution, similarly to the fatty acids. It may be prepared directly as follows: *Hedera* leaves are minced and made into a pap with alcohol of 85-90°. This is allowed to stand twenty-four hours, pressed out, and the liquid distilled to remove the alcohol, until it begins to froth strongly. On cooling, the liquid deposits a very abundant flocculent precipitate, or even forms a thick magma. It is mixed with water and filtered. The filtrate contains *hedera-tannic acid*; the precipitate contains the body mixed with chlorophyll and fat. The latter is washed with water, dried, dissolved in boiling alcohol, and the solution allowed to evaporate spontaneously. The body is deposited in small granules, which under the microscope are seen to consist of minute aggregated scales. Adhering chlorophyll and fat are removed by drying and washing with benzine. Finally, it is advisable to wash with water and recrystallise from alcohol, and if necessary to purify with animal charcoal. It appears to be changed by precipitation with hydrochloric acid.

This body forms a light powder, consisting of microscopic scales. It is difficultly soluble in cold water, ether, or benzine, readily soluble in boiling alcohol. Water imparts to it the property of frothing strongly. In this respect it resembles *sapontin*, but differs from it in not being readily soluble in water. It also differs in not being poisonous. With potash or soda-lye the body is saponified, so to speak. On addition of common salt in powder the alkaline solution is precipitated. From the liquid may then be obtained a substance which violently excites sneezing. This body exists in *hedera* in very large quantity, especially in countries to the south, and particularly in the older leaves, which have been most exposed to direct sunlight. It is probable that a thorough investigation of it would throw light on the nature of *sapontin*. A chemical examination made by Professor König indicates that the body is a glucoside. The residue of boiling with water and sulphuric acid, after removal of the sugar, is a beautiful crystalline non-soluble body.

SALICYLIC ACID FOR KEEPING LEECHES.

A correspondent of the *Pharmaceutische Zeitung*† writes thus: "I have with much interest prepared all the compounds of salicylic acid, and made every imaginable experiment with it. As I was one day examining my leeches the idea occurred to me to ascertain how these animals were affected by salicylic acid. Accordingly, I placed two apart, and added water and the acid; too much of the latter being employed, the leeches expelled blood and died. Another was placed in water containing a very minute proportion of the acid; the animal remained quite lively, excreted mucus in the usual natural manner, and at the end of a month the water was free from any disagreeable smell and remained tasteless. After a month I placed two leeches in about 100 c.c. of water, to which had been added four drops of an aqueous solution of .33 per cent. salicylic acid. Having kept the first leech three months, and the latter two months, in unchanged water, they remain quite healthy, and

* *Pharm. Zeitung*, May 5, 1875, p. 283.

† *Pharm. Zeitung*, May 22, 1875, p. 327.

* *Archiv. de Pharm.*, April 1876, p. 299.

† May 29, 1875, p. 343.

the water is fresh and clear. Eight days ago I found the water in a litre vessel, in which I had placed 100 leeches, turbid and slimy, and of a foul smell, with three dead leeches at the bottom. I removed the dead animals, added to the water 20 drops of the above solution of salicylic acid, and set the vessel aside. Next morning the foul smell had quite gone, and the animals were very lively. I poured forth the water, well-washed the leeches, rinsed the vessel, and supplied it with fresh water containing 20 drops of the solution. Since then the animals have been healthy, no death has occurred, and the water remains fresh and clean. This observation must certainly be of the highest interest to pharmacists, especially as summer is now at hand, when it is very difficult to keep these delicate creatures alive and in good condition. I would recommend, therefore, to all who are obliged to keep leeches the use of salicylic acid, and am confident they will be pleased with the result."

CROTON OIL.

According to the circular of a firm of manufacturing pharmaceutical chemists in Germany, croton oil for medicinal use is now almost universally required to be bright and transparent, whilst formerly the inquiry was for a turbid non-transparent oil. The new fashion is that of the French market. Whether the change is an advantageous one as regards the skin-irritating properties of the oil may well be questioned, for the clearness and transparency are obtained only by the separation of a turbid and possibly most active portion of the oil. Anyhow, the oil as at present prepared has not gained a greater share of the confidence of physicians than was possessed by the old.

With reference to the above, Herr Kühn writes to the *Pharmaceutische Zeitung*:—"This statement does not correspond to my experience. I have myself prepared for many years the croton oil used in my shop for dispensing by depriving the seeds of their outer coating, breaking up the kernels and expressing cold. The filtered oil obtained in this way has the yellow colour of an almond oil, keeps perfectly clear for years, and is in the highest degree active. I obtain from 750 parts of croton seeds 500 parts of kernels, and from these 200 parts of oil, having the characters above described. By warm expression or by extraction of the comminuted seeds with ether, and subsequent evaporation of the ether, a darker and less clear oil is obtained, which it is highly improbable possesses greater activity."

RAPID ASSAY OF CINCHONA.*

Numerous processes have been suggested for the estimation of quinine in bark. M. Herbelin thinks that the following, being extremely simple, should find favour with pharmacists. Ten grammes of cinchona reduced to coarse powder are moistened with 30 grammes solution of ammonia, and the two well mixed with the aid of a glass stirrer. Thirty grammes of benzene are now poured upon the pasty mass, and solution of the quinine is favoured by agitation. After a few minutes the benzene is decanted into a 200 c.c. flask; the operation is repeated four or five times, often if necessary. Fifty grammes of a five per cent. aqueous sulphuric acid are added to the benzene solution and agitated; a few minutes suffice to convert the whole of the quinine into sulphate. The aqueous liquid, freed from benzene by decantation is now precipitated by ammonia, the quinine dried and weighed. The operation may be completed within an hour; it requires no particular apparatus, and is inexpensive, the benzene serving for several operations.

ON THE PREPARATION OF SYRUP OF HYPOPHOSPHITE OF IRON.

M. CARLES† gives the following process for preparing this syrup:—

	Grammes.
Cryst sulphate of iron.	15-000
Hypophosphite of lime cryst.	9-15
Distilled water boiling	350-00
Powdered sugar	600-00

* *Union Pharm.*, from *Journ. de Pharm. et de Chimie*, June, 1875, p. 295.
† *Journ. de Pharm. et de Chimie*, May, 1875, p. 416.

The sulphate of iron is dissolved in about 20 grammes of water, and the hypophosphite in the remainder. The two solutions are mixed and shaken briskly. At the end of a quarter of an hour the magma is turned upon a linen filter, pressed and filtered afresh through paper. Sufficient distilled water is added to make 350 parts of liquid, in which, by heating, the prescribed quantity of sugar is dissolved. Each spoonful of 25 grammes contains 0-25 gr. of hypophosphite. If to this syrup is added an equal quantity of syrup of orange flowers, a much more agreeable medicine is obtained; each spoonful in this case contains 0-125 gr. of hypophosphite of iron. This syrup should be kept in bottles quite full.

A NEW METHOD OF ESTIMATION BY TITRATED SOLUTIONS.

M. F. JEAN* calls attention to his new method of estimating nitrates, chlorates, iodates, chlorides, hypochlorites, &c., of iron, lead, manganese, tin, cobalt, nickel, and ferrocyanide of potassium, and of assaying oxides of manganese, red lead, tin salts, plumber's solder and bronzes. This method of estimation is based upon the following reactions.

If to an acid solution of protochloride of copper a body capable of setting free chloride, or of yielding oxygen be added, a quantity of deutochloride of copper is formed equivalent to the chlorinating or oxidising power, which quantity is easily estimated by means of a titrated solution of protochloride of tin. Knowing the quantity of deutochloride formed, it is very easy to deduce from this the quantity of nitrate, chlorate, or peroxide which corresponds to it. To avoid the inconveniences of having numerous titrated solutions, and to simplify the calculations, it is preferable to determine empirically the quantity of deutochloride formed at the expense of protochloride of copper by a known weight of nitrate, chlorate, &c.

ON BROMIDE OF IRON AND ITS PREPARATION.

To prepare bromide of iron M. Prinie† gives the following formula:—

	Parts.
Iron filings	10
Distilled water	80
Bromine	21

The iron filings and water are put into a flask, a small quantity is added, and the flask closed with a plug of cotton, to avoid the loss of bromine. It is shaken, and when the vapour of bromine has nearly disappeared a fresh quantity is added. This process is repeated till the whole of the bromine is used. When the combination is finished the whole is poured—including the excess of iron—into a stoppered flask. The solution contains one-third of its weight of bromide of iron. With this normal solution pills and syrup are prepared.

PILLS OF BROMIDE OF IRON.

	Grammes.
Filtered normal solution	12-00
Iron filings	0-10
Powdered gum arabic	9-5
Powdered liquorice	6-5

The solution and the iron are put into a porcelain capsule, and quickly evaporated until the liquid has lost two-thirds of its weight; while still hot it is poured into a porcelain mortar, dry and slightly warm. The two powders are mixed, and added in sufficient quantity to form a consistent pill mass, which is divided into 60 pills, which must be kept in a dry bottle. Each pill contains 0-05 gr. of bromide of iron.

SYRUP OF BROMIDE OF IRON.

Filtered normal solution	12 grammes.
Gum syrup of orange flowers	620 "

Mix. 31 grammes of this syrup contain 20 centigrammes of bromide of iron.

* *Journ. de Pharm. et de Chimie*, May, 1875, p. 407.

† *Journ. de Pharm. et de Chimie*, p. 419, May, 1875, from *Soc. Ph. de Bordeaux*.



CONDUCTED BY RICHARD J. MOSS, F.C.

Y this time most of our correspondents have cultivated a fair knowledge of those important bodies, the alkaloids, a change will probably be welcome. The detection of adulteration being a favourite subject, we shall combine with it the cognition of the substances supposed to be adulterated. This we will offer exercises at once interesting and practically useful. The subject of our next exercise will be a substance lectured from the Pharmacopoeia. It is to be subjected to such chemical examination as is required to find out what it is; and it will also be necessary to report on the purity of the substance. A problem of this sort might be made extremely difficult by employing some unlikely adulterant, not easily detected. We intend, however, to confine ourselves to strictly practical work, so that no novel impurities or adulterations need be expected. Reports of the examination of the substance should contain, as briefly as possible, an accurate account of the work done.

Students who wish to compete should send us their names and addresses before the 20th inst. On the 26th the samples will be forwarded.

Students' papers will be received up to August 16th.

ANSWERS.

The subject of the last exercise was *Quinia Sulphas* (B.P.) mixed with ten per cent. of cinchonine sulphate. The recognition of the principal alkaloid in this case did not present any serious difficulty. The behaviour of a solution of the substance to which chlorine water had been added, with ammonia and with latanum ferrocyanide, combined with the fluorescence of the acid solutions of the salt, afforded conclusive evidence of the presence of quinia in quantity, and there could be no doubt concerning the acidulous radical that was present. The detection of the cinchonine was not so easily accomplished, owing to the great similarity of the properties of these two alkaloids. The usual method of separating them is based upon the fact that quinia dissolves in about 50 parts, and cinchonine in about 100 parts of ether. It is obvious that a complete separation cannot be effected by this method. Such a mixture as that which we offered for examination contained too little cinchonine to afford satisfactory indications when submitted to the official test, depending upon the use of ether. The quantity of ether required to dissolve all the quinia was sufficient to dissolve the cinchonine as well. The result was that four out of every five of our correspondents failed to detect cinchonine. An increased profit of about eight per cent. might be obtained by adulterating quinia sulphate with a quantity of cinchonine sulphate too small to be detected by the official test. Such an increase in profit is not very tempting, but it might induce the manufacturer to produce an impure article. It is possible, however, to modify the official test so as to detect a much smaller quantity of cinchonine. Liebig, the originator of the test, has suggested the use of ether saturated with cinchonine, and therefore incapable of dissolving any more of this alkaloid. This modification has the disadvantage of introducing cinchonine into the mixture, whether it was present originally or not, and thus rendering the test uncertain. The sulphates may, however, be partially separated by the use of water. Quinia sulphate requires about seven hundred parts of water for solution at ordi-

nary temperatures, while cinchonine sulphate dissolves in about sixty parts of water. Therefore, instead of operating directly on the suspected sample, the salt may first be treated with about twenty times its weight of water; this will dissolve all or nearly all of the cinchonine salt, while only a small portion of the quinia salt will enter into solution. The liquid after filtration may be treated as in the official test, employing only a small quantity of ether to dissolve the precipitated quinia. A quantity of ether equal in volume to one-tenth of the aqueous solution should suffice for this purpose. The characteristic reaction of cinchonine with potassium ferrocyanide requires some notice. This reaction is prevented by a very slight excess of acid, so that if an acid is used to obtain a solution of the salt it is necessary not to employ any more than is actually required.

PRIZES.

The first prize has been awarded to P. STANDEN, (Eneas), Ironville.

The second prize has been awarded to W. W. EDWARD (W. W. E.), 17 Bloomsbury Square.

Marks Awarded for Analyses.

Eneas (1st prize)	..	..	..	..	..	90
W. W. E. (2nd prize)	..	..	..	..	..	88
P. W.	..	..	..	..	..	85
Chloral	..	..	..	..	..	80
Fortuna	..	..	..	..	..	80
Waverley	..	..	..	..	..	50
Non Nullus	..	..	..	..	..	50
Cambridge	..	..	..	..	..	50
Monad	..	..	..	..	..	50
G. W. R.	..	..	..	..	..	45
E. O. Brown	..	..	..	..	..	45
Dun Spiro Spero	..	..	..	..	..	45
G. G. W.	..	..	..	..	..	20
W. J. J. S.	..	..	..	..	..	0

TO CORRESPONDENTS.

* * All Communications should include the names and addresses of the writers.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

F. W.—The ferric chloride reaction to which you refer is not mentioned by any of the authorities on the alkaloids. You did not give a sufficiently detailed account of the test to enable us to repeat your experiment. The subject is worthy of further attention.

Chloral.—There was no evidence of a double sulphate, so you should have confined yourself strictly to the truth, and simply stated that you found quinia sulphate and cinchonine.

Fortuna.—The cinchonine was present as sulphate, a salt much more soluble in water than the corresponding quinia salt. Taking this into consideration, we cannot quite understand how you managed to dissolve away the quinia sulphate in water and leave the cinchonine salt undissolved.

Waverley.—It was quite unnecessary for you to supply us with a copy of the table of the reactions of the alkaloids from Fresenius's "Analysis." Your table of solubilities is also superfluous; if it was original of course you would deserve some credit for it.

E. O. Brown.—Even if morphia had been the adulterant we should have given you very little credit for pronouncing it to be present. Morphia does not colour sulphuric acid. The colour of a solution of quinia in sulphuric acid varies with the temperature. The difference you observed may have been due to this cause.

Dun Spiro Spero.—It was distinctly stated in the announcement of the exercise that the salt might be adulterated, and that the possible adulterant was to be sought for.

G. G. W.—It is impossible to account for your failure in the search for the acidulous radical. A hydrochloric acid solution of the salt gave a copious precipitate with barium chloride.

W. J. J. S.—Your paper reads like a parody on the analysis. You must have examined some other substance in error—at least we hope so.

H. J. Jackson.—Your paper was only received on the 19th ult., and was thereby excluded from the competition.

THE CIVIL SERVICE STORES.

DISCUSSION IN THE HOUSE OF COMMONS.

FOR the following "special report" we are indebted to our contemporary *The Grocer*:-

House of Commons, July 2.

Sir THOMAS CHAMBERS, in calling the attention of the House "to the absence from the reports of the Civil Service Inquiry Commission of any investigation into the complaints made against the system of trading now carried on by the servants of the Crown under the guise of co-operative stores," said that he was with some surprise, and some little disappointment, that he asked the Chancellor of the Exchequer, the other evening, whether the Government had made up their minds as to what steps were necessary for the purpose of answering the complaints, or redressing the grievances of those who complained, that at the present time the tradesmen of London and other large towns had great reason to complain of the answer given to him, that "since the official inquiry during last session no fact connected with this point had been brought to the notice of the Chancellor of the Exchequer." Nothing could be more annoying than that, at the close of the session, the Government should not have thought it necessary to say anything on this point. The Chancellor of the Exchequer used these words after arguing the question generally: "I am anxious that the Government should not come to any positive conclusion, because there are questions in respect to the Civil Service at this moment under review, and a Commission sitting which will give some support and some views of the question which will be of considerable importance in its bearing upon the subject. Therefore all I can at present say is that I am convinced that the hon. and learned member who has brought forward this subject found it upon the objection that the Civil servants are competing with the tradesmen, and giving time that belongs to the public, and therefore to the tradesmen, who are compelled, as the taxpayers, to contribute to their salaries to carry on that competition. I admit that there is something in that. At the close of the session I shall take the sense of the department as to the propriety of a clerk taking up his time for private work, but at present I cannot go further into the matter." If it were possible to intimate that a commission of inquiry was sitting to inquire into this subject, and therefore the Government were not only exonerated and excused, but absolutely justified, in refraining from giving an answer, then this language gives that clear and conclusive statement. They were justified in saying, that a Commission is sitting which will give their opinions and investigate the matter, and that it would be improper for the Government to make any statement on the subject, because it would be undertaking to settle a matter which was before another tribunal, and therefore it was natural that there should be a good deal of disappointment that this Commission did not report upon this matter at all. The terms of the notice he put upon the paper were a little complicated. He said, "the absence from the reports of the Civil Service Inquiry Commission of any investigation into the complaints made against the system of trading now carried on by the servants of the Crown under the guise of co-operative stores." The first question that arises, continued the hon. and learned member, is—"Is that a just insinuation: is this trading or co-operation? The question is no longer one which can possibly be argued. The facts are that this is an ordinary system of joint-stock trading with some singular distinctions, to which I shall call the attention of the House. There are 4,500 subscribers or partners in one of these concerns, and 15,000 tickets to outsiders are issued. Customers are invited to come from the outside, and the whole thing is carried on by the shareholders just as any other joint-stock company would carry on their business, inviting customers from the outside, although they would do it ordinarily without the formality of giving tickets. For, after all, to call the system a Civil Service association is the greatest sham and the greatest pretence. Not only are these tickets given to persons who have no connection with the Civil Service of the Crown, but they are supposed to be, and certainly can be, with the greatest facility transferred from one to another, and anyone can present himself at what are called the "Civil Service Co-operative Stores," who has no connection, or who has no relation who has any connection, with the stores, and become a customer at these

stores for any amount of goods. It is impossible to draw any distinction between a system of joint-stock company trading and the so-called system of co-operative trading. There is no distinction, in point of principle, between the ordinary joint-stock trading and this joint-stock trading under the guise of co-operative stores. It is impossible, therefore, to argue that there is any such distinction; it is a question of trading, and of dealing with anyone. It is idle to get up and say that "you must not complain of co-operation, because the tradesmen charge so highly and adulterate the articles; and for that reason you cannot abuse co-operation." I am not complaining of co-operation. Whatever mischief may be inflicted by a system of co-operation is an evil that the tradesman must put up with. I am not complaining of co-operation; the whole foundation of the argument of those who oppose me is, that you are complaining virtually of co-operation. I am complaining virtually of joint-stock trading, with certain distinctions between the ordinary, recognised, *bond fide* joint-stock trading, and the joint-stock trading under the pretence of co-operation. Very well, then; if that be so, if I make out that point, then it is a question for the Government to decide whether the Civil Service trading is to be carried on, for both on general principles and on grounds of public policy Civil Service trading is forbidden. On general principles it was forbidden. There was so long ago as 1849 a Treasury Minute, which is in these terms—"That as the public are entitled to the whole of the time of the Civil servants, and as officers who hold situations are required to be in daily attendance, they should not be allowed to hold situations as directors of companies requiring their attendance elsewhere during office hours." That it went on to say why it was put in force; which was, that it was in the interests of the public that the principle should be enforced. The reason they issued that Minute was that it was in the interests of the public service to do so; and if it was so, then there is no argument against it. Why, the evils in 1849, when this Minute was prepared and issued, were as nothing compared with those that exist now. The Civil servants of the Crown who filled the situations such as those described in the term of this Minute, in 1849 were not one-tenth the Civil servants who now fill situations, and fill them in increasing numbers. There is no foundation in reason, no justification in public policy for this, and there never was a time when the parties interested were more entitled to call upon the Government to stand by that Minute than at the present time. What has been the policy of the Government? Take a recent occasion when a minute has been issued—that Minute, since the Civil servants have become directors of public companies and undertaken the duty of editors—relating to the Civil Service. They have done this: the Lords of the Treasury have said that no official of the Government can be permitted to be connected with the public journals without the sanction of the heads of the department. The Minute says, "My Lords are strongly convinced of the necessity of enforcing this rule, and gentlemen who take editorial duties can hardly fill situations of this description without placing themselves in a false position. It must disturb the confidence which ought to exist between them and their superiors." The Chamber of Trade wrote to the Chancellor of the Exchequer, and called his attention to this, and asked their lordships to forbid their servants engaging in trade, as placing them in a false position in relation to their duty. The Chancellor of the Exchequer wrote to them, very properly acknowledging their letter, and instructed his secretary to say that the cases appeared to be neither parallel nor analogous. They are strictly analogous: the same class of reasoning which makes it inexpedient and impolitic that Civil servants should be connected with the public press, and disconnects them from taking part in journals, either as correspondents or as editors, applies to the case of the Civil servants engaging, against the spirit of their contract with the State, in trade. It is perfectly obvious that when an enormous trade and business is carried on, which turns over one million pounds per annum, and the Civil servants in different departments of the State are engaged as directors, they might have the means of obtaining facilities for official information from which the public are excluded, and from which they may take advantage, to the detriment of the public service. Therefore, to say these two cases are not strictly analogous, is wrong; they are so, for they are open to the same class of reasoning, and liable to the same class of objections. See what the Government are actually doing: requiring the whole of their time, energy, and ability

from the Civil servants, applies to the lower class of the public servants. The dockyard workmen are absolutely precluded from engaging in anything whatever beyond their dock work; and one of the first regulations of the police—and it is a most peremptory regulation—is that they shall not be engaged in any other occupation, nor even as their wives allowed to keep a shop. With regard to postmasters, besides others, they are absolutely forbidden doing anything. What these Minutes say, and these facts prove, is that the principle of the contract between the Civil servants and the State is a principle that gives to the State the whole of the man's time; and more than that, that whenever it is possible that information may be employed by him outside his duty, detrimental to any class, he is peremptorily precluded from using any such information. They are peremptory rules: he is not to use any of these means, either for his own advantage or that of other parties. It is clearly contrary to the principles and policy of the State. The point relied upon by those who complain is this: it cannot be denied that this is a joint-stock company; and don't give this form of trading a false name, for it cannot be pursued by those who carry it on in an honest and *bona fide* manner. The fact is, this Association has enormous advantages. What have they done? They registered themselves as a provident association under the Act of Parliament of 1807, and the result of that registration was that they pay no income-tax. One of them has 100,000*l.* accumulated profits, and it is proposed to divide these profits. Under the provisions of that Act to which I have alluded, it is possible that the tax-gatherer may get hold of them to pay income-tax. At present exemption has been claimed, and was allowed under the advice of the Commissioners of Income-tax—that they, being registered under this particular Act of Parliament are expressly exempted; so that we have persons of enormous capital who have started business when the State has provided them with salaries, and not only salaries, but superannuations,—who have started as traders with these enormous advantages; that they are partly exempted from the payment of income-tax on the ground that they are not traders, when, in point of fact, they are nothing else. I believe that any right is not a fit aid for them to be registered as provident industrial societies? And they, the gentlemen at Somerset House, the tide-waiters, or the lower class, whose necessities plead for them, and require the assistance and help which may be had from such institutions? No; these are excluded. It is the higher branch of the public servants, and these alone, who form these societies. And are they to come under the Provident and Industrial Society Act, intended for the benefit of the poor? So that here we have the rich claiming an exemption which the Act of Parliament intended only for the poor, and thus it becomes a fraud upon the revenue. It is perpetually stated that these are co-operative societies, when they are nothing of the kind; they are only trading societies, and make enormous profits, which they are now about to divide. The object of the Act only contemplated persons of humble life and very slender resources; and these, in point of fact, are not members of these institutions, and derive no benefit from them. Therefore, there is some excuse for bringing this matter forward. It is not right in point of practice—it certainly is not right in point of policy—that such societies should increase and multiply to an absolutely indefinite amount, when they are trading upon the ordinary principle of trade, though without its ordinary burdens—namely, buying in the cheapest market, and not selling in the dearest, certainly, but selling so as to accumulate profits to an enormous extent; and not selling, as the co-operative societies, to make a profit just enough to cover the expenses, whilst their enormous profits are made after the expenses of the society have been paid. So that, I think, the Chancellor of the Exchequer has not unaturally or improperly had his attention called to the serious matter which was brought before him last year. We are patient, the class that I represent are patient and forbearing, but because we are not always grumbling it must not be taken that these in point of fact are not aggrieved. I hope the Government will consider the matter, and do what they can to meet the wishes of the tradesmen who are met with this unjust competition.

THE CHANCELLOR OF THE EXCHEQUER: I must apologise to my hon. and learned friend for not answering the question very carefully the other day, but I have just referred to the speech I made last year which he has quoted, and see that it is in substance very much what I thought it was—namely,

that there are two questions involved in the matter. There is the question how far this system of Civil Service trading is a system that ought to be checked in the interests of other traders, as being in the nature of an unfair competition with them; and the other question is, how far it ought to be checked in the interests of the Government, whose servants are engaged in these pursuits. Now, last year I endeavoured to point out, as well as I could, the very great difficulty the Government were in, in any attempt to deal with the question from the point of view taken by the hon. and learned gentleman, and I endeavoured to show how very difficult and unfair it would be to lay down principles about the Civil servants which would exclude them from the privileges and rights of co-operation, and how very difficult it was to draw a line between co-operation and Civil Service trading, and I think that the upshot of my remarks was that I could not then encourage any idea of interfering with the system that was carried on. At the same time, I am always ready to accept and listen to any representations that may be made as to any unfair advantages that may be taken by a case of this kind. If the persons—as it undoubtedly might be the case, as the hon. and learned members has put it—if some of these associations are trying to get off paying income-tax, that is a point which I shall most certainly say ought to be dealt with, and put a stop to, because they have no right to put themselves in or to assume a position which will give them such an advantage over other traders, as this of being able to exempt themselves from the income-tax. I am quite prepared to look into that question, and to say that if there is any such existing, some remedy should be found. I think that was the principle that was laid down by the right hon. gentleman the member for the University of London, that if there were any privileges of exemption either from the income-tax or stamp duty, they ought not to be allowed. With regard to the other question, that was the point upon which I was speaking when I said that "it would require the serious attention of the Government, and that the Civil Service Commission might throw some light upon it." This question is one that comes before us in various forms; if you encourage a man to do and give you his services upon such and such terms, and he is to give you so many hours of his day for the salary he receives, what are you to do—where draw the line or the limits that you can place upon the employments in which he is not to engage? There is the difficulty which I was pointing out, and which certainly comes up from time to time in very inconvenient forms. I do not know that the Civil Service Commission have thrown much light upon that point, but their labours are now concluded, though the Government have not taken any steps upon their report. No doubt we shall, in the course of a short time, have to take that report into consideration, and some steps may be taken in consequence; and it may be that we can go into this question of the employment of the spare time of Civil servants in connection with the general questions that arise. There are questions that come up—such as the employment of Captain Tyler—which are very difficult questions, upon which it is desirable to lay down some rule. Now the hon. and learned member says—"You have on some occasions dealt with these persons, and if you carried out the same principles on which you dealt with them you would put a stop to Civil Service trading." He mentioned what had taken place with regard to the Minute of the Treasury a little while ago about editors of newspapers, and also referred to the other classes of the dockyard labourers and the police, and said that the dockyard labourers are engaged in no business outside of their calling. Upon that he is misinformed. It is not true that the dockyard labourers are forbidden to take part in any cause, but what they are restrained from doing is keeping public-houses or marine store shops, and businesses of a like kind, the object of which restraint is to protect the public from any mischief that might arise from the temptations that they had for improperly taking possession of Government stores. That is a matter which makes it dangerous to the public service, and that is the reason you prohibit it, and not for the protection of other marine store dealers, or other public-house keepers, but for the protection of the Government. But that is quite apart from the question of allowing them to sell calico or tea, or anything of that kind. Then, as regards newspapers, there again the intention of the Government was not at all towards protecting or preventing competition with the editors of other newspapers, or publishers of any kind, but only to protect the Government

from what they found to be productive of mischief and a scandal on the public service. From time to time, leaders and paragraphs appeared in various newspapers, which were obviously written by persons who had obtained official information, which ought not to have been made public, and of which they had availed themselves to make comments on; in other words, to write articles which were inconvenient to the public service. And therefore it was quite necessary to issue a Minute prohibiting the communication of official information, and warning those who were editors of these newspapers that they might be held responsible for having conveyed official information improperly. We did not say that gentlemen were not to engage themselves with newspapers; we only warned them that if any newspaper or publication with which they were connected contained official information, and they were in a responsible position, we would connect them with it. That is quite different from, and is neither parallel nor analogous to, the case we are now discussing, and I am afraid that I must do very much the same as I did last year, draw a line between the two considerations. With regard to the question of the competition with private trade, I can only say it is difficult for me to interfere with it, and our interference could only be limited to prevent any unfair advantages, such as that of being exempt from income-tax or stamp duties, and upon these I can promise, when my attention is properly directed to it, to make inquiries, and say that any unfair advantage must be put a stop to. With regard to the other questions—how far the public service suffers—that is a point to which I have had my mind especially directed, and I have no doubt, in the course of time, we shall be obliged to make some regulation, and to lay down such principles in regard to such persons as to the employment of their time.

Mr. GOSCHEN: I concur generally with what has fallen from the Chancellor of the Exchequer; and I think it more my duty to do so because a good many of my constituents are interested in it, and it has frequently been brought before me by them, and I have felt it my duty to state, on such occasions, that I should consider it unfair to the Civil servants to place any restrictions upon them which were not placed upon any other class of the community. I think it my duty to repeat that opinion now. (Hear, hear.) It appears that the argument that Civil servants are paid out of the public funds—an argument which has been frequently used—is misleading. I hold that the Civil servants are as fully entitled to make use of their leisure time in any way they may see fit, though servants of the State, as any other class of her Majesty's subjects. I think it is but right that those who have been connected with the Civil Service should state their opinions frankly on that portion of the subject. Therefore, I concur with the right hon. gentleman the Chancellor of the Exchequer, that it would be impossible to hold out any hopes that the complaints of the tradespeople of the metropolis could be met, so far as they object to competition if carried on in the same way as any other class of the community. Everyone must agree with the Chancellor of the Exchequer, if there are any preferences which these co-operative societies enjoy, that those preferences ought to be most rigorously examined and dealt with, and removed; that they ought to have no advantage, most certainly not over any other class. On the other hand, it would be impossible not to allow them to continue their operations on the same footing as other co-operative societies. Upon the second point—viz., how far from the point of view of the public service it is right in the servants of the public to engage in these operations—they would be under the same limitations both as regards their time, their strength, and their honour, as the servants of private employers. It would be most improper, and I believe they never would agree, to allow any official information to be of any advantage to them in their relations to those societies; and I certainly go so far as to say that not only those who are employed in the contract department, but any of the great departments of State, in any capacity which gave them special knowledge of what the effect upon the market of Government operations would be, that those gentlemen ought to abstain from any such operations. (The Chancellor of the Exchequer: Hear, hear.) I think that we must rely upon the good sense and honour of the Civil servants to see that no single stone can be thrown against them in that respect. Then, as regards their capacity as Civil servants, I hold that to put those persons in a high position of the public service, whose energies and freshness, and whose health is of vital importance, and who exhaust themselves by taking a great and important share in the management of co-opera-

tive societies, is detrimental to the public service, and ought not to be allowed. (Chancellor of the Exchequer: Hear, hear.) And as illustrating the view that I take upon this portion of the subject, it was brought before me in a very peculiar manner when I was First Lord of the Admiralty. There was a gentleman there who was a most eminent Civil servant. He also was a most eminent director of one of the co-operative societies—I believe he was one of the founders—and he was the life and soul of this society. He worked hard at the Admiralty, and he worked hard at the other department of his work; and it certainly appeared a strain upon him, and the strain was so great as to threaten his health. A question of promotion arose. He was recommended to me for promotion to a still higher and more responsible position than that which he enjoyed. Under the circumstances I did not shrink from taking this course. I pointed out to this gentleman that if he was entirely free, if he could give his whole heart and soul to the fresh position to which I was prepared to promote him, I should consider him the most eligible person. If, on the other hand, he still kept on at the divided work, I considered that the strain would be so great that I should not be able to give it him. That was taking a certain amount of responsibility upon myself, and I treated the matter in this way because I considered that in his higher capacity he should resign his other work. This was done without in the least trenching upon the right of a public servant to employ his leisure time as he thinks fit. This Civil servant took the course of relinquishing his connection with the Society, and he received the promotion which his talents entitled him to. I thought it not uninteresting to state this case. I generally agree with the views that have been expressed by the Chancellor of the Exchequer. I agree that full liberty should be given to the Civil servants in the same way as would be allowed to servants of private employers; but just as an employer would seek it his duty in certain cases to limit the action of those whom he employs, so the State has the same right to make such demands.

Mr. FORSTER: I do not think the Chancellor of the Exchequer has met the arguments of my learned friend. I distinctly remember, when this subject was brought forward, that the Chancellor of the Exchequer stated that he would inquire into the subject; and he spoke with some hesitation, but he said that the matter required investigation, and all that my hon. and learned colleague complains of is that there has been an entire absence of any investigation, and so far as the shopkeepers of the metropolis are concerned, the Chancellor of the Exchequer has thought it so little worth his while, as not to make any inquiry, but has allowed things to remain just as they were. Now, they complain of that. If the right hon. gentleman has made up his mind in one way, they want to know what that decision is; and they want to know whether the Government give their general approval to the system of gigantic trading now carried on. The tradesmen of the metropolis do not object at all to co-operative societies. If the Civil servants choose to combine for the purpose of buying wholesale goods cheap, and selling amongst themselves at the wholesale price, they have no objection; but what they object to is this—that these Civil servants should form themselves into a society for the purpose of competing with the tradesmen, and selling to the outside public. That is done now every day. Everyone can obtain for 5s. or 2s. 6d. a ticket by which he gets his goods at a very much less price than at an ordinary shop, and in that way the shopkeeper is undersold. And these are some of the reasons urged by tradesmen against this. They say: Civil servants of the Crown are paid by salaries which are taken from the taxation of the country; and they have therefore a right to expect that the whole time of those Civil servants shall be given for the service of the public. We know perfectly well that there are many directors in these associations whose whole time is not given to the public, because they go into these associations, and they employ their time in administering the affairs of these societies. That is one reason we object to this system. Another reason is this: It is no doubt perfectly certain that the Civil servants in the public offices are able to obtain information with regard to forthcoming relaxation of duties, and which enables them to make advantageous purchases. The tradesmen of London and other large towns are entirely in the dark as to this, and therefore they cannot make such advantageous purchases. I believe it is a settled rule in this House that when a member becomes a Minister of the Crown, whether he be a trader or merchant, he must give up entirely his private business, and the reason

of this is that if he continues a trader he may have information which he may use in competition with others. These are the reasons on which the tradesmen base their objections to this system. They do not object to co-operative stores with a fair interpretation of the system—that is to say, if they combine together to buy goods at wholesale prices, and give themselves and their colleagues the benefit of the reduction in price; but they object to the competition with the advantages that these Civil servants have. My right hon. friend the Chancellor of the Exchequer put his case as though the only objection was this about the evasion of the income-tax. He says—"Oh! if they evade the income-tax, I must see that they don't;" and the whole point of his argument was that they shall not evade the income-tax. That is a very natural view on the part of the Chancellor of the Exchequer; but that is not the point with regard to which the tradesmen of London and the large towns take objection to this system. They don't care whether they pay the income-tax or not; but they say, "We have to struggle to make a profit with those who have unfair advantages." I do appeal with my hon. and learned friend to the Chancellor of the Exchequer, and I am surprised that there is no notice taken of what we were promised in the report of the Civil Service Commission.

The subject then dropped.

THE ORIGIN AND PROPAGATION OF DISEASE

A Discourse before the New York Academy of Medicine, with additions.

By JOHN C. DALTON, M.D.

WE reprint the following able summary of modern medical discovery from the latest report of the Smithsonian Institution, Washington (U.S.), which publishes annually select papers on the various branches of science, with the object of promoting knowledge throughout the world.

The anniversary meeting of the Academy of Medicine may be regarded as a sort of annual conference, in which one of its members is deputed to offer to the Academy a short address upon some topic of general professional interest, and more or less appropriate to the time. Perhaps we can hardly employ the occasion to-night in a more suitable way than by endeavouring to see what, on the whole, is the direction in which medical thought is now most active; to cast the professional horoscope, so to speak, for the present, and to anticipate, as nearly as may be, what we are to expect from it in the immediate future.

Not that we should be willing to claim the gift of prophecy or to place too much confidence in delusive flights of the imagination. Medicine is essentially a sceptical science, and very properly regards with disapproval anything which claims her attention without offering, at the same time, unmistakable guarantees of respectability. But there may be a kind of anticipation which is really a scientific one. Within the past two or three years we have seen our own Meteorological Bureau triumph over what was proverbially the most difficult of all popular puzzles, and foretell the weather for each year with certainty which has excited our surprise and admiration. With telegraphic lines from all over the continent converging to the central office at Washington, the chief of the Bureau can trace, from hour to hour, the progress of a meteorological change, moving, with uniform or accelerated speed, from St. Paul to Milwaukee, from Milwaukee to Detroit, from Detroit to Buffalo; and he knows that within a given period it will reach New York, with almost as much certainty as though he stood on the top of a watch-tower and saw it coming. Within such limits as these it may perhaps be allowable sometimes to indulge in surmises, even in the strictest and most exacting of the natural sciences.

Is there anything in the aspect and condition of any part of medicine to-day that looks like a change in the scientific barometer? Can we see such a tendency in the medical mind at present as would suggest what may fairly be called a new movement—in which successive ideas and discoveries are not only accumulating as heretofore, but in which they also seem to be taking, or about to take, a new interpretation; so as to give expression, in definite terms, to a doctrine which has heretofore had only a vague and uncertain existence?

If there be any one direction in which progress is now so marked as to constitute a dominant feature of the present state

of medicine, and to embrace a practically new medical idea, I should say it was that of the *origin and propagation of disease by independent organic germs*. Perhaps it would be wrong to say that this doctrine is even yet distinctly formulated. It is certainly far from being definitely established as a general truth. Some very wild and reckless statements have been made in regard to it by observers possessed of more zeal than knowledge; and some elaborate but baseless theories relating to the specific development and transformation of organic germs have been tried at the bar of scientific investigation, and, being convicted of incompetency, have suffered accordingly the just penalty of extermination. Perhaps the doctrine itself will also be finally abandoned. It may be that the evidence in its favour, which is yet only partial, will hereafter lose its special significance; and the appearances which now seem to sustain it may come to be naturally explained in some other way. Still there can be no doubt that the idea is at present entertained, and that it is by no means confined to the minds of careless or irresponsible theorists. So far, it exists in the form rather of a scientific instinct than of a positive belief; and its grey light hangs about the edge of the medical horizon like the coming dawn of a new period.

Now, can this instinct of the medical mind be justified in any way? Are there any facts and discoveries, already established beyond the possibility of doubt, which have naturally led it in this direction, and which point, like the telegraphic reports of successive meteorological stations, to a continuous and definite movement of scientific pathology?

I think it really began many years ago, in the early investigation of parasitic diseases. Perhaps we can hardly include under this designation the effects produced by ordinary intestinal worms, like *tania* or *ascaris*, because the animal and parasitic nature of these worms was perfectly palpable, and could not be mistaken by any one. But *scabies* was on a different footing. It was a contagious, eruptive affection, capable of spreading over a large portion of the body, and of giving the patient great discomfort; and, when it was found to be due simply to the presence and propagation of a parasitic insect, the discovery was a great achievement, and for the first time made it possible to have a distinct and rational comprehension of the origin of the disease, as well as of its propagation and means of cure. A remarkable circumstance in the history of our knowledge in regard to *Sarcoptes scabiei* is, that its discovery in the present century was in fact a rediscovery of something which had been known centuries before and long forgotten; or, at least, the method of finding the insect having been lost, the most eminent dermatologists of forty years ago had never seen it, and were really in doubt as to its existence. However, this uncertainty was terminated in 1834, by the Corsican student Renucci, and the study of its structure and development was afterward accomplished by Raspail and Bourguignon; so that our knowledge, both of the disease and its parasite, was then placed upon a permanent footing.

Perhaps the most suggestive part of this discovery related to the reproduction of the parasite, the manner in which the female lays her eggs in galleries excavated in the skin, and the time required for the hatching and dispersion of the young, because this showed a direct connection between the local spread of the disease and the increase, by ordinary sexual generation, of the young brood of the parasite. However, there was nothing very remarkable in the mode of this generation. The eggs of the female were deposited and hatched in the usual way, and the young *sarcoptes* came to resemble their parents after a very short and regular period of development.

But ten or fifteen years later a discovery was made with regard to some of the internal parasites which had a character of unexpected peculiarity; that was, the specific identity of two parasites formerly supposed to be distinct, namely, *cysticercus* and *tania*. These two worms—so unlike in their size, their general configuration, and even in the species of animal which they inhabit—were shown by the researches of Siebold and Küchenmeister to be only different stages of growth of the same creature—one the encysted and quiescent, the other the intestinal and reproductive form. The well-known experiments carried on in this investigation showed further, however, the regular and natural conversion of these two forms into each other; and thus we came fully to understand that the existence of tape-worm in man was owing to his having eaten meaty pork containing *cysticercus*, and that the pig became contaminated with *cysticercus* by devouring the eggs of the egg-bearing ariculations of *Tenia solium*. The knowledge of the alternation of generations

and of the migration of parasites from one habitat to another at different periods of their development become in this way connected with the pathology and mode of propagation of certain well-known and perfectly distinct morbid affections.

But so far, perhaps, these morbid affections hardly deserved the name of diseases. They were simply local disorders, due to the presence of a parasitic intruder in the substance of the skin or in the cavity of the intestinal canal. It was another thing to learn, some years later, that a microscopic parasite might diffuse itself generally throughout the system, and thus give rise to a rapid and fatal train of symptoms hardly distinguishable from those of any febrile constitutional disease. No doubt cases of infection by *Trichina spiralis* have always occurred as frequently as they do now. But previous to the year 1850 the milder ones in all probability were supposed to be rheumatic in their origin, while the fatal cases passed for fevers of a typhoid character. There were even epidemics of the trichinosis affection, as there are of typhoid fever and influenza; and, when the true character of the disease became known, it was perfectly evident how these epidemics originated and exactly how far they might extend. Each one was commenced by the slaughter and preparation for food of a trichinosis pig; and the patients affected were precisely those who had introduced into their systems ever so small a portion of the infectious food.

In this instance, also, there was found to be an unexpected relation between two different forms of the same parasite. *Trichina spiralis* had been known since 1830; but it had yet been seen only in its quiescent, encysted form, embedded in the muscular tissue, without movement or reproduction. Consequently, though we were familiar with the worm itself, we knew nothing of the disease produced by it. Its new growth and active reproduction in the intestinal canal, the swarming emigration of its innumerable progeny, and the constitutional symptoms which followed, were a new revelation, and showed that the whole system, as well as a particular organ or tissue, might suffer from the effects of parasitic contamination.

In all the affections which have now been enumerated, the parasite is one of an animal nature, with regular generative apparatus and active sexual reproduction. But the last thirty years have seen a very remarkable advance also in our knowledge of the vegetable parasites. This has naturally coincided with a similar activity among scientific botanists in the study of the simpler forms of vegetation, the cryptogamic plants in general, and particularly of the microscopic fungi and algae. A little over half a century ago the species of flowering plants described by botanists were much more numerous than the cryptogams; but now the proportions of the two classes are reversed. In 1818, according to Mr. Cooke, an eminent British botanist, "less than eighty of the more minute species of fungi, but few of which deserved the name of microscopic, were supposed to contain all then known of these wonderful organisms. Since that period microscopes have become very different instruments; and one result has been the increase of the 664 species of British fungi to 2,479. By far the greater number of the species thus added depend upon their specific characters upon microscopic examination. At the present time the number of British species of flowering plants scarcely exceeds three-fourths of the number of fungi alone—not to mention ferns, mosses, algae, and lichens."

A large proportion of these microscopic plants are parasitic upon other organisms; and for the earliest study of them, as connected with disease in the human subject, we are indebted to the dermatologists.

The first discovery of parasitic vegetation in cutaneous affections was by Schönlein, in 1839, who found, in the crust of *favus*, cryptogamic vegetable filaments ramifying in the diseased growth. In 1841 Gruby made a similar observation, and described accurately both the mycelium filaments and the spores. He asserted them to be always present in cases of *favus*, and declared that the malady itself was essentially "nothing but a vegetation." The parasite thus described proved to be the same with that previously seen by Schönlein, and it was at last definitely known by the name of *Achorion Schönleini*.

Gruby continued his examination, and in 1844 discovered a microscopic vegetation growing upon the skin, in a case of *Porrigio decalvans*; and the same parasite, the *Trichophyton tonsurans*, has since been recognised as a constant accompaniment of *Tinea sycosis* and *Tinea circinata*.

Finally, *Microsporum furfur* was discovered by Eichstedt, in 1846, as a parasitic vegetation in *Tinea versicolor*; so that within seven or eight years three distinct microscopic fungi

were discovered and recognised as occurring in diseased conditions of the human skin.

Now, the first question which naturally came up in relation to the discovery was this: Is the microscopic fungus the cause of the disease, or is the disease the cause of the fungus? Either of these two suppositions might be the true one. In the first place the fungus, by its accidental presence and growth in the skin, might excite all the irritation and morbid discharges characteristic of the malady. On the other hand, its presence might be altogether secondary, and a result of the morbid action instead of its cause. Every vegetable requires a soil suited to its growth. The fungus germs might be incapable of fastening themselves upon the healthy skin, but might readily flourish in the decomposing mixture of inflammatory exudations. This question, in the earlier stages of the investigation, presented a real difficulty. Henle, in 1840, believed that *Achorion Schönleini* was merely an incidental formation in the crust of *favus*, while Remak and others regarded it as the cause and essential element of the disease.

Now, how was this difficulty to be settled? If *Tinea tonsurans* is always accompanied by *trichophyton*, and if *trichophyton* is never found upon the skin except in some form of *tinea*, how can we tell which of these two is the cause and which the consequence of the other?

The test of this is twofold: 1. Inoculation of the parasite and reproduction of the disease; 2. Destruction of the parasite and cure of the disease.

Both of these tests have been successfully carried out. The inoculation of *Achorion Schönleini* was accomplished by Remak, in 1840, and subsequently by Bennett, Hebra, Vogel, Bazin, Köbner and Deffis; that of *Trichophyton* by Deffis and Köbner; and, finally, that of *Microsporum*, by Köbner, in 1864. The fungus-spores, transplanted upon the skin of other individuals, or upon other parts of the skin of the patient, after a certain interval germinate and multiply, and so create a secondary focus of the disease. The contagious character of the malady is thus seen to depend, not upon a virus, in the old sense of the word, but upon the actual communication of reproductive germs, which give origin in their new location to a vegetative growth similar to the old. The vegetable growth, therefore, precedes the disease, and must be regarded as its cause rather than its consequence.

The actual transportation of these germs through the air is also a matter of demonstration. Lemaire placed glass jars filled with ice in a shallow basin, so that the condensed moisture of the atmosphere, deposited upon the cold sides of the glass, might trickle down and collect in the basin below. He then applied friction to the head of a boy with *favus*, near by, and found that the spores of *achorion* were floated by the air-currents for a distance of twenty inches into contact with the jars; and then, being entangled by the condensed moisture, were carried down into the basin. He sometimes found as many as thirty spores in a single drop of condensed moisture.

The second part of the test is equally well established. I presume that dermatologists are now fully agreed that, for all cutaneous affections known to be characterised by the presence of a microscopic fungus, the one essential element of cure is the application of some parasiticide which shall destroy the vitality of the fungus. Iodine, sulphurous acid, or mercurial bichloride, by killing the vegetable, as sulphur-oil kills the animal parasite of scabies, in simpler cases absolutely puts an end to the disorder, and in the more complicated ones leaves behind only secondary symptoms, which have no longer any specific or contagious character. Of course there are various points relating to these affections which are still more or less in doubt. Some microscopic cutaneous fungi have been described as distinct species, which have not received general recognition, and some observers are disposed to question whether the three principal ones may not all be simple varieties or forms of development of the same plant.

But there are similar points of difference still existing among scientific botanists with regard to microscopic fungi in general; and I believe that the three principal facts of (1) specific parasitic vegetation as a cause of cutaneous disease; (2) its propagation by the transport and germination of spores; and (3) its treatment and cure by parasiticide applications, may now be regarded as wholly beyond a reasonable doubt.

I have already alluded to the remarkable activity of botanical research of late years in the department of cryptogamic vegetation. The most striking results have been obtained by these investigations, in increased knowledge of the modes of develop-

ment and reproduction of these organisms. The phenomena of the so-called alternation of generations and of migration from one habitat or locality to another, are by no means confined to animal parasites. On the contrary, the most remarkable instances of both are to be found in cryptogamic vegetables. Fungi formerly regarded as distinct species, and even as belonging to different genera, are seen to be successive forms of the same plant, following each other in definite order through the regular cycle of their annual reproduction.

The three fungi, known as *Trichobasis*, *Puccinia*, and *Æcidium*, appear in succession, as different members of the same specific generation, upon the cereal grains in summer and in autumn, and upon the barberry in the spring; while corresponding differences are to be seen in their spores and mode of germination at these different epochs.

It would perhaps be difficult to imagine a scientific pursuit less likely to produce anything of value for practical medicine than the study of microscopic fungi growing as parasites upon other vegetables. And yet, if it should finally turn out that these minute researches are preliminary to the discovery of a means for preventing or controlling an epidemic of scarlatina, we can say with truth that such a result would not be more remarkable than many which have actually followed from purely scientific investigations in chemistry and physics.

At all events, it is certain that these botanical discoveries have had an important influence in directing medical research in the path which it is now following. It could hardly be otherwise, from the moment they were found to have a direct connection with certain epidemic diseases in the vegetable world, some of which are of great practical consequence to us as affecting the annual supply of food.

Let me remind you of the history of our knowledge in regard to the disease known as the *potato-rot*.

This disease first made its appearance, so far as we know, about thirty years ago. The most destructive season of that epidemic in this country was in 1844. Previously to that time, the annual crop of potatoes in the United States amounted to over one hundred million bushels; but, in consequence of the blight, it was reduced in some parts of the country to one-half or even to one-quarter of the ordinary yield.

In 1845, it showed itself in England, Scotland, and Ireland, and spread with great rapidity. This is the account of it given by Mr. Cooke, one of the highest authorities on that subject:

"It first appeared in the Isle of Wight, in the middle of August; a week afterward it had become general in the south of England, and at the end of a fortnight there were but few sound samples of potatoes in the London market. The course of the disease was this: in the month of July or August the leaves of the vines would be suddenly seen to be marked with black spots. They then began to wither and give off an offensive odour, and the disease spread so rapidly that the whole vine would be blighted in a few days, and a field, which had before been covered with a luxuriant growth, at the end of a fortnight was merely a scene of desolation, and looked as if it had been struck by a severe frost. If the potatoes were immediately dug out of the ground, many of them were found already partially decayed, or touched with brownish and softened spots."

The disease broke out again in 1854 and 1855, and was destructive in the State of New York, in Rhode Island, Massachusetts, Ohio, Illinois, and at various other points; and about 1865, or ten years later, it made its appearance for a third time. I am told by an old and experienced farmer of Washington County, New York, that in 1864 and in 1865 the potato-crop in that region was practically destroyed; so that often in a twenty-acre field there would not be a single good potato. Potatoes were usually to be had at that place for seventy-five cents per bushel, but in those years they were in some cases sold at eight dollars per bushel, for farmers' consumption.

This destructive malady was at last found to be due to the ravages of a microscopic fungus, called, from its mode of fructification and its injurious effects, the *Peronospora infestans*.

The fungus has a mycelium of fine, cylindrical, ramifying tubes. Its fructifying part consists of filaments which stand up vertically from the mycelium, dividing at the end into four or five branches, and each branch bears upon it several successive swellings, making a kind of sausage-like chain, whence its name of "*Peronospora*." At the end of each chain there is a complete oval spore, and the spore, when ripe, detaches itself and germinates, to produce again a new mycelium.

When the *Peronospora* is placed in contact with the leaves of

a potato vine, its filaments penetrate into and through the epidermic cells, and so reach the intercellular tissue of the leaf and stem; and there they continue to grow, producing a rapid withering and blight. When the parasite has attained a certain growth, it begins to fructify. Its upright filaments burst through the pores of the leaves, and are crowned with the characteristic chain of spores. Each spore, when ripe, if supplied with moisture, produces six or seven secondary zoospores, armed with long vibrating cilia, and capable of a rapid spontaneous motion. After moving about for a short time, the zoospore becomes quiescent, throws out an elongated filament, and germinates afresh.

It is no doubt in this way that the germ of the parasite reaches the tuber of the potato at the root of the vine. For if sound potatoes be placed in the ground, and the surface of the soil be sprinkled with the spores of *Peronospora*, and then watered from time to time, the potatoes are found to be infested with the disease in about ten days.

So the fructification of the fungus naturally takes place upon the surface of the leaves of the potato-vine. The spores fall off, are carried by the rain into and through the soil, and so reach the potatoes beneath. Next year, when the infected potato-eyes are planted germination begins again, the mycelium filaments grow upward through the stem and leaves, and in July or August fructification appears on the exterior as before.

This species affords a good example of the extreme fecundity of the parasitic fungi. It has been estimated that, on the under surface of a potato-leaf, one square line is capable of producing over three thousand spores. Each spore supplies at least six zoospores; so that from one square line we may have nearly twenty thousand reproductive bodies, each capable of originating a new mycelium; and a square inch of surface may yield nearly three million such bodies.

The mycelium filaments can penetrate the cellular tissue of a leaf in twelve hours, and, when established there, may grow and bear fruit in eighteen hours longer, while the spores are perfected and ready to germinate in twenty-four hours after they have been detached and placed in water. This fully explains the rapidity with which the disease is known to spread.

The subject of internal vegetable parasites is of the greater importance, because we now know that they may attack animals as well as plants. The best illustration of these affections is perhaps the disease which, under the name of *pebrine*, has been so destructive to the silk-worm in France. Eight or ten years ago its effects were so serious that, in 1865, the annual production of silk in that country was reduced to less than one-sixth of its former average, and the loss in money-value for that year alone amounted to twenty million dollars. It was due entirely to the influence of a microscopic vegetation, which destroyed the silk-worm, and was readily communicated to the neighbouring broods.

It is plain, therefore, that the study of parasitic diseases, for many years, has been increasing in development and becoming of greater importance in general pathology. From being confined, as at first, to a few cases of local disorder, it has now come to embrace a great variety of morbid affections. It has demonstrated the close connection existing between animal and vegetable pathology, and it has shown that severe and even fatal constitutional disorders of the animal frame may result from the internal growth of microscopic parasites of a vegetable nature. And these facts have been ascertained by patient microscopic investigation, and laborious experiment on the development of eggs and spores, and the phenomena of infection and contagion. It cannot be denied that the results, so far, are genuine.

(To be continued.)

RATAFIA.

THE origin of this, the cognomen of so many delicious and semi-medicated cordials, seems to be obscure: some say it came to us Europeans from India, others from the French word *rectifié* (rectified), but the more likely supposition would seem to be that it is a coinage from the two words *rack* and *tafia*, the latter being the Créole title of the aromatic rums derived in the course of sugar manufacture in the Islands of the Antilles.

The French have perhaps made greater use of cordial liqueurs than other people, and their industrious fabrication, or, more courteously, distillation of them has led to their becoming favourites in all civilised countries: their post-prandial adapta-

bility is well-known, and among the prime favourites who has not heard of and tasted "la grande Chartreuse," more or less monkish in its origin according as it is *le vrai* or the *contrafaçon*; then there is the Curaçoa, of which many types exist, emanating from several different nationalities; we mention also the *Anisette*, that sugary liqueur which Bordeaux so largely manufactures and exports. More modern monkish and lay cordial inventions have also arrived at favour, among which we cite "la Benedictine," "la Berichione," "le liqueur d'or," in the last of which the floating particles of gold foil produce a very pleasing effect, and serve to give some *éclat* to a cordial otherwise of a very commonplace type.

Without pretending to be able to give our readers the formula of these best known liqueurs, we can in this article present to them some valuable recipes of several of the ratafias, which they may regard as being derived from an authentic source. To define more minutely the title ratafia we add that this name is given to those preparations which may be designated as medicated, but which nevertheless are employed more as table liqueurs than as remedies, though they in general possess highly stomachic characteristics.

These liqueurs are prepared in various manners, but generally the aromatic ingredients are macerated in the alcohol, then filtered and sugared to the proper consistency. Another step in their perfection is made by distillation and further sugaring of the residue: this product is called the cream by distillers. With this may be mixed the syrups of various fruits, thus resulting in the desired flavours. Such preparations are, strictly speaking, ratafias. They may be left their natural colour, but are more frequently artificially tinted in different shades suggested by the fruits from which they are derived. As regards this last process, it will hardly be a mystery to any pharmacist. It is very essential that the alcohol employed shall be as inodorous as possible. We subjoin a few formulae:—

Vanilla.	
Vanilla Beans	4 grammes.
Alcohol, 82 per cent. .. .	500 "
Filter and add sugar .. .	1,000 "

Orange Flower.	
Distill a mixture of .. .	
Alcohol, 88 per cent. .. .	4,000 grammes.
Oil of Lemon	8 "
Oil of Bergamote	8 "
To 4,000 grammes of the product add .. .	
Orange Flower Water .. .	4,000 "
Water	7,000 "
Sugar	2,000 "
and filter.	

Curaçoa.	
Macerate for 8 days—	
Bitter Orange Peel .. .	500 grammes.
Cloves	8 "
Cinnamon	8 "
Alcohol	7,500 "
Filter and add .. .	
Sugar	2,500 "
Water	1,000 "

Anise.	
Macerate together—	
Anise Seed	45 grammes.
Alcohol	1,500 "
Water	1,000 "
Sugar	125 "
After 8 days, filter and add .. .	
Sugar	500 "
Water	500 "

Quince.	
Macerate together, 15 days—	
Syrup of Quinces	2,000 grammes.
Alcohol	1,500 "
Sugar	1,250 "
Bitter Almonds, peeled .. .	15 "
Cinnamon	12 "
Coriander	8 "
Mace	4 "
Cloves	3 "
Filter.	

Ratafia Liqueur Ra-pail.	
Macerate, during 15 days, as follow:—	
Angelica Root	15 grammes.
Angelica Seed	15 "
Calamus Aromatic	4 "
Mace	4 "
Myrrh	12 "
Cinnamon	2 "
Cloves	12 "
Aloes	12 "
Vanilla	12 "
Saffron	12 "
Alcohol	3,000 "
ADD SUGAR	500 "
and filter.	

Maracchino.	
Kirsch-wasser	300 grammes.
Water	2,400 "
Spirits of Raspberries .. .	200 "
Sugar	600 "
Alcohol, 90 per cent. .. .	800 "

MEDICINE IN THE BACKWOODS.

SOME time back we told a story of the early days of pharmacy in the outer settlements of the United States. Let us now supplement that sketch with one descriptive of a medical career in a locality somewhat corresponding. We take it from the *Eclectic Medical*, of Cincinnati.

"Twenty-five or thirty years ago Dr. Corbin took a course of medical lectures under Professor A. Curtis, of Cincinnati, that is, he listened to a dozen or so of those fizzio-pathic harangues, which consisted chiefly in labelling the 'mineral doctors,' and in exalting the beauties of lobelia, steam, cayenne, and herbalism generally.

John Corbin had some time previously taken care of a mineral doctor's horse, and occasionally greased the wheels of his sulky. John had also put in leisure time in making pills and such other work as inspired him with the idea that there was nothing specially profound or sacred in medicine; and that almost anybody might become a dispenser of drugs. John took notes as he went, and heard much complaint about calomel and quinine, though the old doctor would give the biggest doses to those who had the temerity to question his wisdom and prerogatives. John had heard of Dr. Curtis and of his wonderful system of medicine; and after gathering together a few shekels he started for the fountain-head of botanic learning. He was honest with Professor Curtis, and opened his heart and his pocket to him. Now the wily old teacher of "innocuous" medication was never known to take quite all the money a poor wretch had, but he usually took all he could get, which was not much, for his followers and retainers were chronically insolvent. Well, for fifty dollars Dr. Curtis agreed to give Corbin a printed sheep's pelt, and a stock of medicine to begin on. Curtis got engaged in a portable steam apparatus about that time, and was anxious to get it introduced in order to prove the superiority of fizzio-pathic practice. Corbin saw the drift of the Professor's mind, and agreed to give a six months' note of hand for fifty dollars to cover the machine for conveying steam from a kettle over the fire to the inside of a bed where the patient might be, and for a jacksack to ride. Dr. Curtis took the note of hand, and delivered up the steam apparatus and the venerable long-eared animal. Corbin was now made—he had a diploma, a sack of medicines, a steam machine, and a jacksack. With these he started for his old haunts on the borders of the Black Swamp in Anglaize County, where he pleasantly dreamed he might rival the old doctor whose horse he had saddled and fed. But he over-estimated his powers, especially as he was about to practise near where he had been raised. A prophet is not honoured in his own country. But, not to be tedious, Dr. Corbin travelled from house to house, and in those days dwellings were miles apart. Not often did he go hungry, for there was genuine hospitality in the log houses of those days, yet his apparel became scandalously tattered. In truth, Dr. Corbin was a sight to behold. His broad brimmed felt hat, long drab coat, butternut pants, and coarse boots on legs too long to be graceful when astride a jacksack, made as a whole a *turn out* which would command a price of admittance if put under canvas.

At length, in his travels he reached the Maumee river, yet without a cent in his pockets, and medicines about gone. He was in a desperate fix, and would have actually busted had it not been for the fact that the farmers in that miasmatic jungle wanted to raise a few mules. This brought the qualities of the Jack into requisition, and the doctor into favour. Finding the people were all shaking with the swamp fever, he got up an aque pill which he solemnly declared was free from quinine and other mineral poisons. He got credit for a lot of medicine at Maumee City, and began a professional business. He made a pill-mass from quinine, cayenne, and a home-made extract of dandelion. It was a success; it cured the ague, and sold more rapidly than it was in his power to make them. Parties from long stretches would wait a day or two for a supply of medicine

that contained no quinine, yet cured ago. In two years Dr. Corbin was worth three thousand dollars cash, and the country swarmed with yearling mules. Dr. Corbin now became anxious to become a landholder, and for a moderate sum paid down he secured a title to twenty thousand acres of the finest timbered land in the world. This the old doctor possessed in his own name until three years ago, when some land sharpeners who knew the B. & O. R. R. was going to plow to Corbin tract, got the title to all for what now a million of dollars could not buy. When Dr. Corbin discovered the imposition, he lost confidence in mankind, and took to drink. A year ago the remains of the venerable *Æsculapius* were found in the woods, gnawed by dogs or wolves. The history of this man contains much to remind us of the career of the 'medicated' pioneers."

MIDLAND COUNTIES CHEMISTS' ASSOCIATION.

THE annual meeting of members and associates was held at the Great Western Hotel on the 30th ult.; the president, Mr. Thomas Barclay, in the chair. After the usual routine business, the President delivered the following address:—

Gentlemen,—It is usual for any one placed in the position I now occupy to address a few words to the members assembled at this annual meeting; and being somewhat of a Conservative, I have endeavoured to follow the custom, and must claim your indulgence for a few minutes whilst I make the following remarks. Met together as we are to celebrate our sixth anniversary, we could do better perhaps than review our position as pharmacists.

The profession of pharmacy has of late become a subject of great interest in the public mind, and we have frequent mention of it in Parliament—some think oftener than is desirable—and now the chemist and druggist is a legally recognised practitioner, the conditions being that he shall pass examinations more difficult than that required by the College of Surgeons for their qualification as dispensers of medicines. These examinations, as we all know, cost a considerable amount of time, anxiety, and money; for, although the preliminary examination to a student fresh from school is a very easy matter, yet it is a barrier to many who had entered the business as apprentices before the Pharmacy Act came into operation, and it is very hard for such young men to begin *de novo*, and learn English grammar, arithmetic, Latin, &c. This examination is no doubt to such a far greater obstacle than the "minor," and many are deterred from pursuing their legitimate calling on account of it.

Having passed this, and by dint of further study and expense got through the "minor" and received the Government certificate as a legally qualified chemist and druggist, what advantages, we may ask, are offered him? Let us look at a chemist and druggist under the Act. He has a monopoly of the name and title chemist and druggist, he only can sell a certain number of poisons scheduled in the Act, and he only is entitled to dispense the prescription of any duly qualified medical practitioner. We will, however, proceed to analyse these things. We find tradesmen—acting perfectly within the law—keeping open shop for the sale of drugs, &c., their shop windows decorated by handsome show bottles, &c., and presenting the same appearance as an ordinary druggist's shop; they have their name on the sign-board without any descriptive title, or call their shops drug, oil, and colour warehouses, &c.; in such shops they are able to sell everything that a legally qualified druggist can do excepting the few poisons, which but for the public convenience every druggist would be only too glad to get rid of altogether, for any profit they yield is more than counterbalanced by the responsibility and risk in supplying them.

Then as to the other advantage, the sole right to dispense the prescriptions of medical practitioners, this appears on the face of it a great concession, but we all know that the great bulk of the profession do not write prescriptions but dispense their own medicines. Now if we could get the average returns made by the whole of the chemists in Great Britain for dispensing, we should find the amount very small indeed, and if we put to this amount that which is realised by the sale of poisons scheduled by the Act, and which only chemists and druggists can sell, the two together would, from my knowledge of the business, be an absurdly small sum, utterly insufficient for his support and the amount of time, money, and anxiety required to pass the examinations.

Now I thoroughly believe in free trade, yet in this instance I would have the Government, as it has gone so far by causing compulsory examinations, &c., to proceed further, and by legislative enactment confine the sale of drugs and pharmaceutical chemicals to chemists and druggists, excepting in small country places, where the number of inhabitants is too small to support a chemist; as a rule in such a place there is one tradesman who supplies almost everything, and he should be allowed to sell some few simple and useful drugs, which had been put up by a qualified chemist; in this way there could be no hardship to the public, on the contrary there would be room in many places for a *bona fide* chemist, where at present there can only be a few traders in drugs, who have no qualification whatever.

Then it is also to be hoped that the medical practitioner will in a short time, wherever there is a chemist, give up the dispensing of medicines, and I feel sure that if this were the case there would be reciprocity on the part of the chemist, who would, instead of prescribing, recommend many patients to the surgeon, and so all would be benefited. The practical pharmacist possesses many advantages over medical practitioners by his training and practice in medicine; his knowledge of the quality of drugs and the compounding of medicines is necessarily much greater, and this will become more and more apparent every year, for the number of new drugs and powerful alkaloids constantly coming into use makes the practice of pharmacy a profession, and the pharmacist becomes a necessity to the medical practitioner. It is not unlikely before long but that we shall have degrees in pharmacy, our friend Mr. Dewson and others being doctors or masters in pharmacy. When we look at the practice of pharmacy now and see that the whole world, animal, vegetable, and mineral, is laid under tribute to produce remedies to aid medical skill, and from the crude materials the most elegant preparations are obtained, and these again are by the ingenious pharmacist made so palatable that the most delicate lady cannot reject them, it is almost impossible to believe that in former times such remedies as the following were used. They are very amusing. For epilepsy, or the falling evil as it was called, the following prescription was ordered:—"The brains of an ass, first dried in the smoke of certain leaves, drank to the weight of half an ounce every day in horrid water, is good against the falling evil. Some give counsel to the heart of a black he-ass, together with bread. The gall of a lion is also recommended to be mixed with water, provided the patient so soon as he hath taken it run about for a while to digest the same." The cure is also said to be infallible if the patient eat the flesh of the vulture, especially when he hath eaten his full of man's flesh.

To cure gout, "take the ashes of the hyena's ridge bone, the tongue and right foot of a seal, put them to a bull's gall, seethe them altogether, and make a cataplasm thereof, spreading the same on a piece of the hyena's skin, and apply it, and you shall see how it will ease the pain of the gout; also the hair of a young boy child eased the said anguish if applied to the place." For sore eyes:—"If the eyes be dripped three times in the water wherein a man or woman hath washed their feet." And although neither Mrs. Allen nor Madame Rachel was living then, the ladies were not neglected, for we have the following recipe for beautifying the complexion:—"The pasterns bone of a young white bulkin or steer, sodden for the space of forty days, until such time as they be resolved into the liquor. If the face be wet with a fine linen cloth dipped into the decoction, it causeth the skin to look white, and without any rivels or wrinkles, but the same must be kept to the face all night in manner of a mask. For beautifying the hair:—"Take ante's eggs incorporated with flies: will give a lovely black colour to the hairs of the eyebrows." Even now some of our country friends come in for oil of bricks, earthworm, and swallow, and if you begin to explain to them that you cannot supply such things, they at once put you down as ignorant of your business.

The public analysts would be at a loss to find a test for some of these things. During the past 120 years rapid strides have been made in every branch of science, and from our own ranks as pharmacists many eminent men have risen. Then Margraf discovered magnesia and alumina; soon after the world-famed Carl William Scheele, a German by birth, a Swede by fame, whilst an assistant discovered fluoric, boric, tartaric, citric, and oxalic acids, also chlorine and nitrogen. At the age of thirty-five he went into business on his own account, and he discovered after that prussic acid, manganese, baryta, &c., his

career ending at the early age of forty-four. Then I should here mention Priestley, our own townsman, who has but lately had justice done his memory for his great discoveries; he, strangely, in England, Lavoisier in France, and Scheele in Germany, discovered chlorine independently of each other. Priestley also has the great honour of being the discoverer of oxygen. He was not a pharmacist, and I should have omitted his name from this list but for his being a townsman. Then we have Pelletier, the discoverer of quinine. Vauquelin, Foucroy, Chaptal, and Dumas were all pharmacists; the latter, born in 1800, is an ornament to this century. Oersted, the discoverer of electro-magnetism, was a pharmacist. Sir Humphrey Davy was an assistant to a surgeon and chemist, at the commencement of his studies. We owe much to him, not the least of which was the bringing out of the illustrious Faraday.

Baron Liebig commenced his researches in a pharmacist's laboratory. Paterkoff was for long pharmacist to the Royal family of Bavaria. Then we must not omit the names of William Allen and Jacob Bell, not last but not least, the name of Daniel Hanbury, who, by his botanical researches, has added lustre and honour to the profession of pharmacy in this country. It would be easy to extend this list, but as there is a considerable amount of business to be transacted this evening I must draw these remarks to a close. In doing so I would urge upon the younger members of this Association the necessity for close observation and study. No doubt it is difficult, after the toils of the day and the long hours which would seem to be almost inseparable from a retail business, to take up the study of subjects like botany, pharmacy, or chemistry. But the self-denial necessary will be more than repaid in many ways; few of us, if any, can look back upon similar work without satisfaction, on the one hand, for having done anything, and, on the other, of regret that we did not give more time to such studies. In conclusion, the motto of our time is "Forward," and I trust that every member of this Association during the coming year will remember it; and if so, some future President may in his address be able to name some student dating from this time who has made himself and the town in which he lives illustrious.

The President's address was listened to with the greatest attention, and at its close it was unanimously agreed to ask him to allow it to be printed, and, by means of general and widespread circulation, promote the interests of pharmacy, as therein so ably set forth. It was also urged that the President be nominated for the London Council, the Birmingham chemists not being represented there. The President said his address was at the service of the association, and he was obliged by the honour they proposed doing him, but his hands were too full to entertain the idea at present.

The following is the report for 1874-5:—

The Council has much pleasure in submitting to the members and associates the sixth annual report; for, although the Association is not so vigorous and useful as it might be, yet, comparing its present condition with that in which it was twelve months ago, there is reason for congratulation and encouragement; then the funds of the Association were in such a low condition that it was decided to remove from the Quadrant, and instead of having rooms requiring the constant presence of an attendant, it was thought the library, and cabinets of *matéria medica*, &c., might be circulated amongst the students, and the meetings of the Association held in some good hotel, by this means a considerable saving would be effected. The result has been so satisfactory that, with a greatly reduced subscription, both for members and associates—namely, from 5s. and 3s. 6d. to the nominal sum of 2s. 6d. and 1s. 6d., the Council is able to report a balance in hand; and is gratified to announce that the books and cabinets are in considerable demand, so that instead of their usefulness being impaired, it is thought on the contrary, that the alteration has been beneficial.

The Adulteration Act has occupied the attention of the Council; and the members will remember an important meeting when Professor Postgate favoured the Association by his presence. It is satisfactory to report that the recommendation adopted at that meeting has been embodied in the new bill—namely, that a sample sealed by the inspector should be left in the hands of the tradesman whose goods are to be subjected to analysis.

The quarterly reports on novelties in pharmacy, &c., by Messrs. H. W. Jones and Stokes Dewson proved interesting, and pleasant evenings were spent in discussing them. It is hoped that these may be continued regularly.

The Association has long felt the desirability of placing within the reach of all apprentices and assistants in the district an opportunity for gaining technical instruction, to fit them for the pharmaceutical examinations; and the Council, not forgetting past failure in this direction, was glad to secure the valuable services of Mr. Stokes Dewson, who has had much experience in professional teaching, and who has commenced courses of lectures on the various subjects necessary to enable students to pass the preliminary examination; and also lectures on botany, pharmacy, and chemistry. The Council earnestly requests that each member and associate will do all in his power to make these classes successful.

A circular was issued during the year, which was freely circulated amongst the chemists in the district, giving particulars as to fees, &c. The Council, desirous of stimulating the students, recommends that, out of the surplus funds in the hands of the Treasurer, 5s. be distributed in prizes of money or books; 2l. 10s. each session, in the proportion of 1l. to the highest major candidate; and two prizes of 10s. each to the two highest minor, and 10s. to highest preliminary. These prizes to be distributed by the President at the Annual Soiree. The Council also recommends that 10s. be given to each student, who enters for a full session under Mr. Dewson.

Mr. Dewson having taken rooms in a central situation, Educational Chambers, 20 New Street, it is proposed to use them for the purposes of the Association, holding the ordinary meetings there, and also placing the library, cabinets of *matéria medica*, &c., under the care of Mr. Dewson, who will act as librarian. The Council proposes paying him 5s. each meeting for the use of his rooms.

The Council made every arrangement last summer for a botanical and pleasure excursion, but the number who were prepared to go was so small, that the project was reluctantly abandoned.

The Council during the year has issued a new edition of the price book, which has been revised and enlarged.

The *soiree*, which has now become a popular and annual festival, it is scarcely necessary to say was a great success. The Assembly Room at the Royal Hotel was considered inadequate to comfortably accommodate the numbers who attended last year, so after considerable hesitation it was decided to take the Town Hall, the result being satisfactory in every respect. There was a large gathering of chemists and their friends, and many of the neighbouring towns were represented; the programme, being an interesting one, offered special attractions. The exhibition was of a novel character—processes of art and manufacture being conducted in the hall, including the manufacturing of confectionery; fancy paper boxes; the sublimation and scaling of chemicals, &c., during the evening. Mr. Pumphrey illustrated a lecture by the lime-light. There was a handsome surplus, which has enabled the Council to recommend the spending of money in prizes, &c.

The Irish Pharmacy Act has been under the consideration of the Council; and it is gratifying to learn that the action it took by sending to each of its Members of Parliament a representative of the district a copy of the resolution it agreed to, has strengthened the hands of the Pharmaceutical Society, and helped to make the bill acceptable to the chemists of Great Britain.

The Council deeply regrets that, through the long continued and severe illness of the treasurer, E. Snape, Esq., it is reluctantly obliged to accept his resignation; but in doing so, would acknowledge its thanks to him for his valued services, and hopes he will before long be again able to take an active share in the work of the Association.

In concluding this report the Council would urge upon all chemists, chemists' assistants, and apprentices the necessity for combination—both for social, educational, and trade purposes. The nominal subscription need not keep anyone out of the Association.

The report having been circulated amongst the members and associates before the meeting, was taken as read, and a discussion arose upon it. A strong feeling was generally expressed that Mr. Stokes Dewson's classes are of great benefit to the chemists and druggists in the district, by providing the means whereby apprentices and assistants may gain information to enable them to pass their examinations, and so draw such to Birmingham and the district in preference to other towns less favourably situated in that respect. Illustrations of Mr. Dewson's success in training pupils who have most creditably acquitted themselves at their examinations having been given, that part

of the report suggesting the giving of prizes, and subsidising pupils who enter for a full session under Mr. Dewson, was unanimously agreed to, and a further recommendation made that gentlemen who may feel disposed to assist in that way be requested to offer further prizes. Letters were laid upon the table from the following members of Parliament:—Messrs. Bright, Dixon, Muntz, Walker, Davenport, and Allsopp, in reply to the memorial sent them by the Association against the Irish Pharmacy Act, each promising to give the matter his best consideration. A second letter was read from Mr. Muntz saying that the Irish Solicitor-General had given way, and the difficulty was removed. After further discussion the report was unanimously adopted. A vote of thanks was accorded to the officers of the Association and to the Council for their services during the past year. Special allusion was made to the treasurer, Mr. E. Snape, and much sympathy was expressed towards him in his affliction. The officers and council were then elected for the ensuing year, Mr. Thomas Barclay being re-elected president, Mr. Jos. Lucas, treasurer; Mr. W. Jones, hon. secretary; and sixteen gentlemen were, by their consent, elected to serve on the council. A discussion arose on the revision of the rules, and it was resolved that the Council have power to amend them as suggested by the meeting. It was stated that the number of members and associates was nearly double those on the books last year. It was unanimously agreed to give a vote of thanks to Messrs. Clarke, Morris, Ground, Challoner, and Jones for their services in canvassing for new members and subscriptions. The meeting then terminated.

REGISTRATION OF TRADE MARKS.

THE following is a copy of the Bill recently introduced into the House of Lords by the Lord Chancellor:—

Be it enacted by the Queen's most excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. A register of trade marks and of the proprietors thereof shall be established under the superintendence of the Commissioners of Patents, and from and after January 1, 1875, a person shall not be entitled to institute any proceeding to prevent the infringement of any trade mark by this Act required to be registered, until and unless such trade mark is registered in pursuance of this Act.

2. A trade mark must be registered as belonging to particular goods, or classes of goods; and when registered shall be assigned and transmitted only in connection with the goodwill of the business concerned in such goods, and shall be determinable with such goodwill, but subject as aforesaid registration of a trade mark shall be deemed to be equivalent to public use of such mark.

3. The registration of a person as first proprietor of a trade mark shall be *prima facie* evidence of his right to the exclusive use of such trade mark, and shall, after the expiration of five years from the date of such registration, be conclusive evidence of his right to the exclusive use of such trade mark, subject to the provisions of this Act as to its connection with the goodwill of a business.

4. Every proprietor registered in respect to a trade mark subsequently to the first registered proprietor shall, as respects his title to the trade mark, stand in the same position as the first registered proprietor, with this exception, that his title shall be subject to the adverse claims of any person claiming under or through the first proprietor.

5. If the name of any person who is not for the time being entitled to the exclusive use of a trade mark in accordance with this Act, or otherwise in accordance with the law, is entered on the register of trade marks as a proprietor of such trade mark, or if the registrar refuses to enter on the register as proprietor of a trade mark the name of any person who is for the time being entitled to the exclusive use of such trade mark in accordance with this Act, or otherwise in accordance with law, or if any mark is registered as a trade mark which is not authorised to be so registered under this Act, any person aggrieved may, by motion in any of Her Majesty's superior courts of law or equity, or by application to a judge sitting in chambers, or otherwise as may be for the time being prescribed, apply for an

order of the court that the register may be rectified; and the court may either refuse such application, or it may, if satisfied of the justice of the case, make an order for the rectification of the register, and may award damages to the party aggrieved.

Where each of several persons claims to be registered as proprietor of the same trade mark, the registrar may refuse to comply with the claims of any of such persons until their rights have been determined by the court, and the registrar may himself submit or require the claimants to submit in the prescribed manner their rights to the court.

The court may, in any proceeding under this section, decide any question as to whether a mark is or is not such a trade mark as is required or authorised to be registered under this Act, also any question relating to the right of any person who is party to such proceeding to have his name entered on the register of trade marks, or to have the name of some other person removed from such register, also any other question that it may be necessary or expedient to decide for the rectification of the register.

The court may direct an issue to be tried for the decision of any question of fact which may require to be decided for the purposes of this section.

Whenever any order has been made rectifying the register, the court shall by its order direct that due notice of such rectification be given to the registrar.

6. The registrar shall not, without the special leave of the court, register in respect of the same goods, or classes of goods, a trade mark identical with one which is already registered with respect to such goods, or classes of goods, or so nearly resembling the same as to be calculated to deceive.

It shall not be lawful to register as part of or in combination with a trade mark any words the exclusive right of which would not, by reason of their being calculated to deceive or otherwise, be deemed entitled to protection in a court of equity; or any scandalous designs, and the registrar may refuse to register, without the special leave of the court, any trade marks which may in his judgment be armorial bearings.

7. Subject as aforesaid, a register office shall be established in such manner, and with such officers, and at such salaries, to be paid out of moneys provided by Parliament, as the Lord Chancellor may, with the consent of the Treasury, direct; and the Lord Chancellor may from time to time, with the assent of the Treasury as to fees, make, and, when made, alter, annul, or vary, such general rules as to the registry of trade marks, and as to the classification of goods for the purposes of this Act, and as to the registration of first and subsequent proprietors of trade marks, and as to the fees to be charged for registration, and also annually for the continuance of a trade mark on the register or otherwise, and as to the removal from the register of any trade mark in respect of which an annual fee is required is not paid, and as to the persons entitled to inspect the register, and as to any proceedings to be taken to obtain the judgment or leave of the court is required to be obtained under this Act, and generally for the purpose of carrying into effect this Act, as he may deem expedient. Any rules made in pursuance of this shall be laid before both Houses of Parliament as soon as practicable after the making thereof. Any rules made in pursuance of this section shall be of the same validity as if they had been enacted by Parliament.

8. The certificate of the registrar as to any entry, matter, or thing which he is authorised by this Act, or any general rules made thereunder, to make or do shall be evidence of such entry having been made, and of the contents thereof, and of such matters and things having been done or left undone.

9. For the purposes of this Act: "A trade mark" means some mark, sign, or device either with or without the addition as part of such trade mark of letters, words, or combinations of letters and words; and "prescribed" means prescribed by general rules made in pursuance of this Act, and "court" means any of Her Majesty's superior courts of law or equity, or any court to which the jurisdiction of such courts may be transferred, or any one or more of such courts which may be declared to be the court for the purposes of this Act by such general rules as aforesaid.

10. Save as in this Act otherwise provided, the law relating to the use of trade marks or words or other distinguishing marks in the nature of trade marks, and the doctrines of courts of equity as to the exclusive use of names, colours, or any other things whatsoever shall remain in full force.

11. This Act may be cited for all purposes as the Trade Marks Registration Act, 1875.



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"WITH regard to the Silicated Carbon Filters, I have made many experiments upon them, and have been astonished at the energy and rapidity of their action. I passed through a small Filter of this make some of the worst description of water supplied by the London Water Companies, and found it, after filtration, to have become as pure as the very best London water. My experiments show that the Filter exercises a decomposing action—a chemical action—on the Organic impurities in Drinking Water. I have no doubt that water, which is dangerous from the Organic Matter contained in it, becomes safe on passing through the Silicated Carbon Filter. A point of some importance, shown by my experiments, is that a Second Filtration still further improves the quality of Drinking Water. After being in use for a considerable period, the Filters lose their power and require renovation. I have found that the passage of a little Hot Water through the Silicated Carbon Filter, and afterwards blowing a little air through it, restores its power."

J. ALFRED WANKLYN, M.R.C.S., London,
Formerly Professor of Chemistry in the London Institution;
Joint Author of a Book on Water Analysis, and of the
Ammonia Process.

RENDALL'S THEOBROMINE, OR CONCENTRATED COCOA,

BEING a first-class article, and nicely got up, commands a good sale by all Chemists who bring it under the notice of their customers.

In 1s., 2s., 3s. 9d., and 7s. 6d. tins, through the Wholesale Houses, or direct from the Proprietor,

J. M. RENDALL,
28 QUEEN STREET, EXETER.

Chief Wholesale Agents—

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THE SALE OF FOOD AND DRUGS BILL.

IT still remains doubtful whether our legislature will pass a reasonable and workable act in relation to the sale of food and drugs, or whether by aiming at a standard of absolute and unattainable perfection, they will only once more irritate traders, puzzle magistrates, and develop in the most aggravated form those modern excrescences, the insatiable and reckless public analysts. The Duke of Richmond has promised, in deference to the opposition both within and without the House of Lords, to remove the word "knowingly" from clauses 3 and 4; but he has also promised to insert a proviso "to the effect that it should be within power of the accused to prove before the magistrate that he had no guilty knowledge of the admixture." If this arrangement be carried out in a just spirit, we hardly think honest retailers will have any reason to complain; the effect will be to throw the burden of proof of innocent intention on

the defendant instead of on the prosecutor, as it now stands; but as the defendant and also his wife will be at liberty to give evidence on their own behalf, the chances of an unjust conviction are not very great, assuming always that the Duke of Richmond's expressed intention be fairly carried out in the words which he may introduce.

The Duke was safer in his logic than in his chemistry when, in reply to Lord Penzance, he maintained the reasonableness of the exceptions allowed for mixtures in rendering substances "portable," "palatable," "improved in appearance," or "preservable." He instanced ether as a substance not portable, unless mixed with something else, and the chemical attainments of the British aristocracy may be estimated by the fact that no one challenged this rather wild assertion. The Marquis of Salisbury met the case more correctly when he told Lord Penzance that "there were so many articles with which it was necessary to mix other ingredients that any attempt to make stringent regulations on the subject would only make the Act unworkable." In reply to this, Lord Penzance made the extraordinary observation—extraordinary, we mean, because it was precisely opposed to the amendment he was advocating—that "where, as for instance salt in bread, the admixture was a common ingredient, there could be no necessity for stating the fact. Where drugs, too, were commonly prepared in a particular way, the purchaser, when he demanded those drugs and got them prepared in the usual way, obtained the article he required." No more than this is wanted by traders—the right to supply articles which customers want without the risk of absurd, but not the less costly, prosecutions.

Imperfect as it may be, this bill will soon receive the royal assent, and will replace the Act of 1872. The cleverest lawyer living could not prophesy exactly how it will work in practice, and defects may be found in it which have not yet been suspected. But we are somewhat sanguine that it will prove a success. It will punish with unprecedented severity actual adulterators when they are seized; and at the same time it is framed to protect to a great extent the non-fraudulent trader from the harassing attacks of the ambitious analyst. As we near the conclusion of the struggle which has characterised the passage of this important bill we may once more regard the singular features which it has presented. A Government with a brute force majority, ready to wheel to the right or wheel to the left, or right-about-face at the word of command, can easily carry out its cabinet resolutions. But on a subject upon which its information is limited and almost entirely second-hand, it is not to be wondered at if its movements are sometimes a little eccentric. But what was unexpected was the development of such fierce and eager hatred of tradesmen on the part of the public analysts as a body. Two or three years ago these gentlemen had the reputation of being quiet, earnest workers in the field of science. No one ever doubted the accuracy of their results, and the popular belief was that nothing was impossible to chemical analysts. But these ideas have been roughly shaken since 1872. The contradictions of analysts between themselves, the open way in which they have sold their reputations, and the reckless manner in which they have sought to build up a reputation which might be marketable, have seriously lowered the *morale* of the profession. But this was a loss which might be repaired or borne; the loss which they seemed chiefly to dread was the opportunity of further attacks on tradesmen as a basis for the establishment of their own fame. The activity and energy displayed by a few of them in this cause were so great that they have perhaps done more to defeat their object than to advance it; but it has not been pleasant to notice the animus which has evidently inspired too many of the public speeches and letters of certain analysts, nor to read or listen to the gross slanders and insults which have been published in the most reckless manner, *unrebuked* by the

aller and more honourable members of the same profession, who must have known their falsity. In this connection we cannot avoid a reference to the great services which throughout this discussion have been rendered to all classes of tradesmen by that indefatigable worker, Mr. R. M. Holborn, the tea merchant. Only those who have been mixed up in the work connected with this bill know how persistently Mr. Holborn has performed the task which he undertook for the Tea Dealers' Association. On every opportunity of public discussion he has met the analysts and fought them tooth and nail; in the police courts, in the committee room, in the House of Commons, in the House of Lords, in the Government offices, he has been at work with the object of securing a bill fair to tradesmen, and amid such general apathy as has been generally exhibited in reference to this bill by tradesmen with prosperity and good name at stake, Mr. Holborn's spirited action deserves every honour and much gratitude. In our correspondence columns this month that gentleman directs the attention of wholesale firms to a risk which still threatens them under the bill as it stands.

ACORN COFFEE.

THE Leicester and Northamptonshire public analyst has explained the method by which he found acorns in coffee in a manner which leaves us more than ever in alarm in respect to the risks of tradesmen in this scientific age. It appears that whenever Northamptonshire coffee was put into his furnace for the purpose of reducing it to ash, a portion of the apparatus fell in with fatal regularity, and became intimately mixed with the coffee which was being experimented upon. The fragments of the machinery, "on chemical examination" (we quote from Mr. Young's letters to the Northamptonshire magistrates), "were found to contain certain elements as foreign to the ash of pure coffee as they are the invariable constituents of acorns. It would be a pleasing problem to set a chemical class to discover from this information the material of which the furnace in question was constructed. Without lingering in this tempting field of investigation, we pass on to remark that Mr. Young might possibly have avoided this mysterious and somewhat humiliating explanation if he had known in time the particulars of the narrative which we are about to disclose.

Until within a few days there existed in the Eastern district of London a good-sized factory of a preparation called "coffee surrogate," acknowledged by the press, the medical profession, and by able analysts to be a very superior article in point of flavour, purity, and nutritiousness (see prospectus.) The firm consisted of two Englishmen and a German, and they engaged as their chemical manager Mr. Walter Breton, of 10 Walbrook. By the aid of this gentleman's scientific skill the firm succeeded in producing from an ounce of coffee a pound of a substance which was certainly a remarkably successful imitation of the ground berry, the balance being almost entirely acorns roasted and ground. The only other ingredients in the mixture were a small proportion of sugar, which in the process of roasting was converted into caramel, and a very little tartaric acid added to bring out the flavour. A trade with France and other foreign countries was opened up, and the "coffee surrogate" was a commercial success. At any rate, some twenty tons of acorns have been thus transformed during the past six months, and as the wholesale price was 32s. per cwt., while the preparation could hardly have cost more than 10s. or 12s. per cwt., the margin between expenses and receipts must have been considerable.

We are afraid that the *boulevardiers* of Paris have not been the only consumers of the elegant beverage yielded by the

"surrogate." There is reason to believe that surreptitious supplies have found a welcome in certain parts of England, and Northamptonshire may have been one of the favoured districts. Lately, emboldened by success, the proprietors have introduced the article somewhat more openly, and it was put up in packets to retail at 6d. per pound. The prospectus which lies before us would tempt the most callous gourmand. Observe particularly the chemical analyses published therein. Professor Wm. White, Laboratory and Assay Office, 25 Finsbury Place, certifies that—

It is more nutritious than ordinary coffee. It is also invigorating, grateful to the palate, digestible, and wholesome, and on comparison I find it greatly superior to the ordinary cheap coffee sold.

Again, Dr. A. Vassard, Ph.D., member of the Polytechnic Society of Paris, Chemical Laboratory, 7 Carlton Square, says—

While it gives an agreeable and palatable beverage, it is at the same time highly nourishing, through the great quantity of nitrogenous principles it contains. I have no hesitation to recommend it for infants and weakly-constituted persons.

The prospectus also gives us tables of analysis from these eminent authorities. They are worth reproduction.

This is "Professor" White's—

Theine (the active principle of Tea and Coffee)	22.70 (1)
Tannic Acid	6.00
Albuminous Matter (highly nutritious)	25.70
Natural Colouring Matter	11.80
Gluten (also highly nutritious)	5.10
Amylaceous Matter	12.75
Various Organic Matters	16.15
	100.00

And "Dr." Vassard's is like unto it:—

Theine or Caffeine	22.10 (1)
Albuminous Matter (very nourishing principle)	29.00
Gluten (highly nourishing)	6.00
Amylaceous Matter	10.75
Tannic Acid	5.90
Organic Colouring Matter	8.00
Divers Organic Principles	16.66
	100.00

To buy a compound of such marvellous excellence as this for only sixpence a pound was more than poor humanity had a right to expect; but the guardians of our Inland Revenue have interfered with the happy prospect, and only recently they carted off some tons of the "surrogate" from Limehouse to Tower Hill, there to be "baptised with fire," in utter disregard of the "infants and weakly-constituted persons" for whom it was so eminently adapted.

THE CHEMICAL SOCIETY.

Thursday, June 17, 1875.

PROFESSOR ABEL, F.R.S., in the Chair.

After the usual business of the Society, seven papers were read, the first of which, "Notes on the chemistry of tartaric and citric acids," by Mr. R. Warrington, gives many important particulars connected with the manufacture of these acids and also detailed accounts of the methods of analyses—many of them novel—of the various raw materials from which they are made. After this the secretary read a communication "On the action of nitric acid on copper, mercury, &c., especially in the presence of metallic nitrates," by Mr. J. J. Ackworth. Dr. Gladstone then gave a short account of the "Decomposition of Water by the joint action of aluminium, and aluminium iodide, bromide, and chloride, including instances of reverse action," by himself and Mr. Tribe. The other papers were "On nitrosyl bromide and on sulphur bromide," by Mr. M. M. P. Muir; "On Achrenamide, a new polybido-arsenate of lead," and "On certain new reactions of tungsten," both by Professor J. W. Mallet, and "On the action of chlorine on acetamide," by Dr. Prévost. The meeting, which was the last of the season, was then adjourned until November next.



AN INLAND REVENUE ACT AFFECTING CHEMISTS AND DRUGGISTS.

We quote three clauses from a "Customs and Inland Revenue Act" (38 Vict. ch. 23), which concern chemists and druggists:—

8. In lieu of the duties of excise now payable by law upon or in respect of the licenses to be taken out yearly in any part of Great Britain by the owners, proprietors, makers, and compounders of, and persons uttering, vending, or exposing to sale or keeping ready for sale any medicine liable to stamp duty, there shall be paid for each such license—

The duty of £0 5 0

9. A license to a dealer in foreign wine, or to a retailer thereof, shall be granted so as to extend to the sale of any kind of sweets, or made wines, or mead, or metheglin in any quantity, without the payment of any further duty than such as is chargeable on a license to a dealer in foreign wine, or to a retailer thereof.

10. Subject to any regulations which may be from time to time made by the Commissioners of Customs and the Commissioners of Inland Revenue respectively, tinctures or medicinal spirits may be warehoused upon drawback by a licensed rectifier or compounder of spirits, in any customs or excise warehouse under the like provisions under which British liquours may be so warehoused by virtue of section thirteen of "The Customs and Excise Warehousing Act, 1869."

FLUID LIGHTNING.

ONE of the best of recent ideas in the patent medicine trade is that of an American, who has been supplying half-ounce bottles of "fluid lightning," at a dollar each. The directions were to the effect that a few drops of the liquid were to be placed in the palm of one hand and applied to any part of the body where pain might exist. At the same time the palm of the other hand was to be applied to the nape of the neck. In a few seconds the electric current is developed and is indicated by a smart pricking sensation, rapidly increasing in intensity, and soon passing away, often taking the pain with it. The marvellous liquid proved on examination to be simply alcohol, containing in each bottle 5 drops of the essential oil of mustard and 2 drops each of oil of sassafras and oil of pepperment. We throw the formula into the market, and we should hesitate to assert that the action of the lotion was not electric.

ARTIFICIAL ICE.

THE frigid luxury seems to have been more successfully produced by artificial means at Montgomery, in the State of Alabama, than elsewhere, if we may judge from the following details. Seventy thousand gallons of water are used daily in the manufacture of 12,000 pounds of ice, the cost of which is about three eighths of a cent. per pound, and it is claimed to be much cleaner and purer than lake ice from the North, the simple transport of which exceeds the entire cost of the artificial product. The distilled water is put in tin cans thirty inches long, and nine and a half inches wide, and two and three-fourths inches thick, which leaves the ice in convenient shape for handling.

These cans are then placed in rows in tanks filled with salt water (though of course the water does not come quite to the

tops of the cans so as to mix with the distilled water they contain, through which iron pipes conduct the ether.

The ether is made in another room, and after being purified is pumped into a receiver and brought under a pressure of 70 to 110 pounds to the square inch, which liquidizes it. It is then forced through a small tube to a larger one, which opens into all the pipes in the tank (about 100 pipes in each tank); it then expands into a gas, and fills all the tubes, its capacity for expansion being as 1 to 600.

The ether extracts the caloric from the water which surrounds the tubes thus equalising the temperature and bringing the whole below the freezing point; the distilled water freezing very readily, and the salt water being brought down several degrees colder than ice, yet without freezing. The gas passes on through the pipes and into a receiver, from which it is pumped into an ether-holder and again reduced to a liquid by pressure, which is facilitated by passing it through a long coil of pipe surrounded with cold water; it is then forced through the tubes again and repeats the same work. Some of the ether gas pipes were covered with snow to the depth of three-quarters of an inch, which has collected from the surrounding atmosphere. It is very difficult to confine it, but if not allowed to escape, the same quantity can be used continually. The cans are taken out one at a time, and dipped in a vat of hot water, which loosens the cake of ice, which then slips out, and the can is again filled and set in its place. This is done three times a day.

These slabs of ice weigh twenty-five pounds each, and four of them are piled on top of each other and allowed to freeze together, forming a block.

These blocks are kept separate by placing small sticks between them.

CHEAP ADVERTISING.

THE well-known Ménier, of Paris, triumphantly celebrated as a large wholesale druggist, chocolate maker, and caoutchouc manufacturer, has just won a suit instituted by him against the General Omnibus Company of that city. In the year 1855, when there were fewer omnibuses than there are at present, Dr. Faivre made a contract with the company for advertising a speciality of which he was the owner; the agreement stipulated that he was to pay 24*l.* a year for the right of posting up his handbills in the vehicles of the company—said agreement to be binding until the termination of the company's charter: the question was whether this right could be disposed of to a third party. Dr. Faivre sold his concession to M. Ménier; but the company refused to recognise the transfer, and hence the action which has resulted in the Tribunal of Commerce giving a decision against the company with damages, for an interruption in the contract for six months, of 40*l.* The Tribunal also ordered the company to post up M. Ménier's bills within 24 hours, and fixed the termination of the contract in the year 1884, that being the expiration of the company's original charter. As there are now many scores of times the original number of vehicles running, this decision results in a wonderfully cheap contract for a valuable publicity.

CHEERFUL INTELLIGENCE.

THERE seems just now a run on the discovery of utilities of certain noxious small game to the human species. We are not among those who imagine there must be some mistake in creation unless they can find that every particle of organic and inorganic matter is constructed for their benefit, or at least for the advantage of their race. It would puzzle these egotistic students to grasp the idea that quite as possibly human beings

were created for the purpose of giving mosquitoes and bugs something nice to bite at, as that the latter were placed here to provide some unknown blessing to ourselves. But it is comforting to learn that animals which have hitherto been regarded with hatred or disgust are still capable of being turned to our profit. A genial correspondent of the *Scientific American* says he has made a delicious perfume from that sociable animal, the bed-bug. This is his formula for what we shall call the "otto of cimex":—"If nice fat bed-bugs are placed in a saturated solution of nitrate of potash in water, and exposed to the air for several days in an open vessel, there will be no apparent change in the bugs; but there will be in the odour, for now it is as delicate and delicious as before it was rank and disgusting. No doubt the odorous principle could be easily separated, perhaps by digesting with alcohol or ether; and if neatly bottled and labelled, it would yield a large profit to practical perfumers."

Another newspaper paragraph informs us that a Mr. E. P. Frank has discovered a specific for asthma in the evil-smelling secretion of the "skunk." It is, we are informed, a powerful anti-spasmodic, and instantaneous relief and speedy cure is secured by smelling a drop or two in a bottle. Hitherto it has been a hard thing to believe that the secretion of the "skunk" could be of advantage to mankind, but it now appears that even that despised and offensive animal has not been made in vain.

Lastly, Dr. Chevreuse, of Switzerland, announces a new and curious utilisation of the May bug or cockchafer. It consists in decapitating the living insect one hour after it has fed, when, on opening the stomach, several drops of a coloured liquid are obtained, which varies with the nature of the plant fed upon. This substance has been used as a water colour for painting with considerable success, Dr. Chevreuse having formed a scale of fourteen different tones or shades. It is a permanent pigment, unalterable by air or light, and imparts this quality, it is stated, to other paints with which it may be mixed.

THE NATURAL MINERAL WATERS OF NORTH AMERICA.

THE old time "Congress," "Empire," "Blue Lick" and "White Sulphur" spring waters still hold the first place in the estimation of the trans-Atlantic public, and are sold, especially the two first, in the most fabulous quantities annually, surpassed only by the world-renowned "Vichy."

There are between thirty and forty varieties of natural mineral waters now in vogue in the United States and the Dominion of Canada, all of native origin, to which may be added the oceans of artificial, which have reached an immense demand, as well as a large quantity of the leading continental waters.

That inland Scarborough—Saratoga—holds the first place in this lucrative traffic, and much of the wealth to which the locality owes its development has been amassed from the profits of the famous Congress Spring, a sparkling, strongly saline water, with refrigerant, cathartic and aperient qualities. Here also may be found the well-known Empire Spring (tonic, aperient and diuretic), the Eureka (cathartic and tonic), the Excelsior, Geyser Spouting, High Rock, Columbian, Hathorn, Red, Saratoga A, and Star waters, each of which has issued from the rocks in response to the tapping of some Yankee Moses.

A few miles from Saratoga is Ballston Springs, where there are the following waters: the Ballston, Franklin, and Washington, which enjoy, however, only a limited demand.

Old Virginia possesses several favourite springs, such as the "Blue Lick," "White Sulphur" and the "Rockbridge," while Vermont has several popular waters in her "Missisquoi," "Middletown," and "Vermont." Other sources are of minor

note, except a few in the Canadian Dominion, of which the "St. Catharine's" is the most celebrated.

Some of the springs send out their waters in bulk—the barrels being metal lined, and in certain instances the water is sold in this way as low as one shilling a gallon.

Within a few years the fabrication of fictitious Vichy, Kissingen and other continental waters has been carried on to a wonderful extent. All well-appointed chemists' shops are now fitted up with draught apparatus for these as well as that national passion, "Ice-cream soda." Crystals for producing the different waters have also been introduced, and meet with favour. To be in a continuous state of swallowing seems to be the Yankee destiny, and we readily admit that he submits with becoming alacrity thereto.

THE BRITISH HOMŒOPATHIC SOCIETY.

WE had the pleasure of attending the annual meeting of the British Homœopathic Society held at the London Homœopathic Hospital last month. A spirited lecture was delivered on the occasion by Mr. A. C. Pope, Vice-President, who took occasion to point out that homœopaths did not profess to abide exclusively by the method of *similia similibus curantur*, but were willing to use every means that seemed good for the relief of their patients. Only their experience had taught them that Hahnemann's theory was a valuable guide in the selection of their remedies. Mr. Pope also gave some instances of outrageous exclusiveness on the part of allopathic physicians, but, comparing the recent decision of the Birmingham Medical Institute to admit homœopaths with certain resolutions passed at a meeting of the British Medical Association at Brighton in 1851, it was shown that in this respect prospects of harmony were brightening. After the lecture all the members were invited to supper at the house of the President, Dr. Bayes, after which some excellent speeches were delivered by that gentleman, Dr. Ludlam, of Chicago, Dr. Talbot, of Boston, U.S., Dr. Hughes, Dr. Hamilton, and others.

THE BRITISH PHARMACEUTICAL CONFERENCE.

PROFESSOR ATTFIELD has issued his usual amiable notification to members of the British Pharmaceutical Conference, suggesting a Post Office Order for 7s. 6d., and eloquently sketching the happiness in store for those good members who pay up and visit Bristol next August.

The Conference will take place on Tuesday and Wednesday, August 24 and 25; and on Friday, August 27, it is intimated the local committee hope to have the pleasure of entertaining their visitors at Cheddar, "with its singular cliffs and wonderful stalactite caves."

We are glad the British Pharmaceutical Conference is so flourishing; and we are certain that the meeting at Bristol, where so much pharmaceutical talent exists, will considerably strengthen its popularity. The Conference year commences on July 1, and new subscriptions sent to Professor Attfield, 17 Bloomsbury Square, will both aid in promoting the objects of the Association and return an abundant profit to those who join it and take part in its proceedings. It is a thoroughly unselfish and catholic body, and well deserves the co-operation of all chemists and druggists.

Mr. T. B. Groves, of Weymouth, will again preside at the meetings, and Mr. John Pitman, of 50 Redcliffe Hill, is acting as local secretary this year.

THE IRISH PHARMACEUTICAL SOCIETY.

THE following are the gentlemen who, according to the Irish Pharmacy Bill, are to form the first council, and the nucleus of the new Pharmaceutical Society of Ireland:—Four physicians and surgeons:—Sir Dominic Corrigan, Dr. Rawdon Macnamara, Dr. Aquilla Smith, and Dr. Frazer. Four Apothecaries' Hall representatives: Dr. Ryan, Dr. G. B. Owens, Dr. Collins, and Dr. Leet. Three chemists: Mr. Tiebhorne, Dr. Emerson Reynolds, and Dr. Hodges, of Belfast. Five druggists: Mr. Hodgson, Mr. Hayes, Mr. Goodwin, Mr. William Allen, and Mr. Holmes. And five provincial apothecaries: Messrs. Whittaker and Pring, of Belfast; Messrs. Goulding and Harrington, of Cork; and Mr. M. V. Bourke, of Limerick. "It will be observed," says the *Medical Press and Circular*, "that the representation of the medical profession is extremely small in number, though good in the selection of individuals, and it is subject for serious consideration whether the indirect interests of medical men can be adequately maintained by so small a phalanx against such an army of pharmacutists." Why medical men are to have seats on that council at all is a question beyond the reach of pharmacutists on this side. But the result of a collision of opinion, say between the five druggists and Sir Dominic Corrigan, is not happy to contemplate. Erin's pharmaceutical sons will have to be very good and very cold if they manage to work for long in harmony with a group of energetic physicians, who will enjoy above all things the management and development of pharmacy in Ireland.

PETROLIANA.

PROGRESS is the order of the day in the noted oil regions of Pennsylvania, and the super-abundant enterprise of the local capitalists has covered the surface of the country with a network of tubes for transporting the oil to the nearest railway station. Drayage of the oil in barrels is entirely superseded, and as an inhabitant lately remarked, "instead of the oaths of the teamster with the crack of his whip, we now have the click of the oil pump, which says to us, 30 cents. a minute! 30 cents. a minute." The associated pipe companies are now taking oil from some 2,000 wells south of Oil City, the present flow being 20,000 barrels per day. The capital invested in the tube lines is about 1,000,000, and profits reported large.

The "shipper" of the oil has the choice of three railways to the great sea-ports, and has only to mention for which he "opts" to the company who issue him a certificate for so many barrels, which passes from hand to hand in the sales of the oil like a bank cheque.

A former celebrity of Petrolia familiarly known as "Coal Oil Johnny," who squandered a million and a half of dollars in riotous living in sixteen months, is now the foreman of a gang of bridge builders, in Iowa, at two dollars a day.

THE WILL of Mr. John Wyman, of Shirley Lodge, Coombe Lane, Croydon, and of 122 Fore Street, wholesale druggist, who died on May 26, was proved on June 10 by John Sanderson Wyman, M.D., the nephew, and Mr. Arthur Fry, the executors, the personal estate being sworn under 45,000. The testator bequeaths to his brother, George Wyman, 10,000; to his nephews, Mr. John S. Wyman, Mr. John Wyman, and Mr. Henry Wyman, 3,000, each; to his nieces, Mrs. Gale and Mrs. Nettelfield, 2,000, each; to his nieces, Miss Jane Wyman, 1,000; to his executor, Mr. Arthur Fry, 100; to each of the clerks and warehousemen in his service at his place of business, if they have so been two years at the time of his decease, one year's wages; to his domestic servants, Sarah Hill and Edith White, 500, each; and the residue to his nephew, Dr. J. S. Wyman.



HOW TO TEACH CHEMISTRY.*

CHEMISTRY is now a recognised branch of English education. This science, so interesting in itself and valuable in its bearings on the general pursuits of life, is no longer restricted to the medical or pharmaceutical student, but a knowledge both of its theory and practice is accepted as an essential requisite amongst all classes of society. Hence a new order of things has arisen, and strenuous efforts are being made to cope with the necessities of this intellectual development. It is obvious that a sudden demand for culture in a special direction must severely tax the energies of its promoters; nor can too high praise be awarded to Professor Frankland and others for the admirable manner in which they have met the emergency.

It is matter for sincere congratulation that where the response from the learners' side has been so satisfactory, assistance on the part of the teachers has been so abundantly afforded.

We have good books—not mere compilations: a revived trade in apparatus and appliances, cheap and well-organised classes, and men of high scientific name have ably seconded the movement.

First amongst these must be held in respectful mention Professor Roscoe and his school; our great scholastic foundations have not been slow in taking the initiative, which lesser establishments have followed; and the youth of this generation are largely indebted to the system pursued at South Kensington in the advancement of intelligent instruction. Yet, though science may be a lovely flower like the rose, it has its thorns. Granted even eager students (and these are by no means the only class), none know better than those who have had practical experience how supremely difficult it is to teach a branch of knowledge to explain which books can do comparatively little, and where infinitely more depends on the habit of personal observation. This habit is not evoked simply by classical study, nor is it created by literary tastes. Until this faculty has been awakened success in physical and experimental study is neither possible nor to be expected.

Recent examinations have led to the discovery that young chemical students are profoundly ignorant of experimental illustrations, and that in consequence they are unable clearly to express in writing that which they only superficially understand. To remedy these twin defects, as well as to provide science teachers with better materials for instruction, is the object of the work now under notice.

The little volume called "How to Teach Chemistry" is a condensed report by Mr. George Chaloner of six of Frankland's lectures, delivered in 1872, embracing the range of subjects included in the elementary stage.

The lectures treat of preliminary matters, chemical force and action, hydrogen, oxygen, ozone, and the properties of water, chlorine and its compounds, boron, carbon, nitrogen with ammonia, the sulphur preparations, and chiefly sulphuric acid, while the concluding lecture gives a brief insight into the doctrine of atomity, the laws of condensation in volume, and the replaceability of hydrogen in its compounds.

The plan of these lectures is totally distinct from that ordinarily adopted: they are neither descriptive nor didactic, but they present either for the student's use or specially for the guidance of the science teacher, a mass of illustrative experiment.

The intention is that the student should learn nothing by rote—nothing which he does not thoroughly understand—noting which he has not seen demonstrated before his eyes, and scarcely anything which he has not mastered by repetition of the experiment at his own home. This is the true method of

teaching, and when faithfully adopted renders the study of chemistry fascinating both to the teachers and the taught.

But to secure this and the experiments must be selected with great judgment, and the apparatus used must be of an inexpensive character. These desiderata are fulfilled in the work just issued, the design being amplified by an addendum placed at the conclusion of each lecture.

Occasionally the subject wanders beyond the immediate scope of the syllabus of the elementary course of inorganic chemistry, and such departure is recommended in preference to a too slavish adherence to a prescribed curriculum. Hence we have instructions respecting the quantitative composition of water, the igniting points of various substances, and a mode of preparing zinc-ethyl. Moreover, the student is invited to learn something of the chemicals in everyday use. "Strictly speaking, these come in at the advanced stage, under their respective metals. But common oxides, hydrates, chlorides, nitrates and sulphates are properly mentioned under their respective non-metallic constituents. Their trivial names, systematic names and formulae, should be given to students, and specimens should be shown. If the pupils can be persuaded to try a few simple experiments with them, such as examining them on charcoal before the blow-pipe flame, it will be a good preparation for the advanced stage, which perhaps is in itself rather too heavy a course for a single year" (page 63).

Few passages are available for quotation, as the experiments derive an interest chiefly from their simplicity rather than from any novelty they may present. We may select, however, a practical remark on the preparation of nitrous oxide, the production of which is an embarrassment unless certain precautions are employed, and these are not indicated in an ordinary manual:—

"In preparing nitrous oxide, ammoniac nitrate should be first fused, so as to drive off its water. As glass is liable to be overheated, a porcelain dish should be used, and the fused salt, just as it begins to decompose, poured out upon an iron plate to cool; it should then be coarsely powdered. This plan avoids the condensation of steam in the upper part of the flask, and consequent risk of cracking, as well as saves time. When collecting the gas the heat should be moderated after fusion has commenced, to prevent a too stormy evolution of gas."

A very clever and convenient arrangement is shown for passing sulphuretted hydrogen (SH_2) through solutions of pure cupric sulphate, arsenious anhydride, tartar emetic, plumbic acetate and zinc sulphate free from iron, and explaining the brown, yellow, orange, black and white precipitates.

The remarks on stencil plates and anilinae black ink may prove of service:—

"The gum tragacanth is dissolved by heat in the proportion of 20 parts by weight to 600 parts of water.

Solution I.

Gum tragacanth solution, parts by weight	..	..	26
Hydrochlorate of aniline	..	..	25
Ammoniac chloride	..	..	4
Water	..	..	45

Solution II.

Gum tragacanth solution, parts by weight	..	..	65
Potassic chlorate	..	..	3
Cupric chloride	..	..	6
Water	..	..	26

"These solutions are mixed in equal parts a few hours before use, and shaken up well. The diagrams must be hung up to dry for a day or two as soon as completed, and then washed in the usual way. On no account are they to be folded until washed, or they will 'set off' unpleasantly. If in stencilling a mistake is made, the letter can be washed out by immediate vigorous brushing with strong soap and water; but it is less troublesome to stitch over the error with a piece of calico and stencil afresh" (p. 81). One passage is rather hard on aspirants for honours at competitive trials:—"It is remarkable how students at the May examination, 1870, misunderstood the first question in the paper, 'You have given to you some sulphur, water, and nitric acid; describe how you would make sulphuric acid from the materials?' The question obviously referred to the oxidation of sulphurous anhydride by means of nitric acid. Yet the majority of the candidates who attempted it gave a long account of sulphuric acid, with all the details which they could recollect of the leaden chambers, &c. This gives a striking illustration of the necessity of intelligence as

* *Hints to Science Teachers and Students*, being the substance of Six Lectures delivered at the Royal College of Chemistry in June, 1872, by Edward Frankland, D.C.L., F.R.S., Professor of Chemistry in the Royal School of Mines; summarised and edited by George Chaloner, F.R.S., Lecturer on Chemistry at the Birkbeck Institution; author of "Outlines of Chemistry." London: J. & A. Churchill, New Burlington Street. 1875.

THE IRISH PHARMACY BILL was read a second time on June 15, and this fact was duly reported in the *Times* of the 19th. On the 23rd the *Medical Press and Circular*, which is generally well posted on Irish affairs, commenced a leading article thus:—"This bill, although for the third time set down for a second reading last Monday, has not yet surmounted the stage in which its principle is enunciated." This was unfortunate, but it soon appeared that history was not to be the only sufferer from the accident that had placed pen, ink, and paper in the way of the writer from whom we have just quoted. The only opposition to the bill, he continued, was from the English Pharmaceutical Society, and that was "an emanation of the narrowest and most selfish trades-unionism." "Emanation" was good. The two-struck reader was led to imagine, if he could, how foul a stream of crime the English Pharmaceutical Society could pour forth if this display was only "an emanation." THE CHEMIST AND DRUGGIST next fell under the lash in consequence of the few gentle remarks we launched last month in defence of our countrymen. If we object to Irish pharmaceutical chemists coming here as pharmacists of the highest rank, although no power here is allowed to check their attainments, why should we claim, we are asked, the right of English pharmaceutical chemists to go to Ireland in a similar manner? Our answer to that inquiry is, that we do not claim the right. Then we are told that our "thunder" is "ridiculous," and our "special pleading" "puerile," in claiming for the English Society a trade-mark property in the title "Pharmaceutical Chemist." As well might the London College of Surgeons claim a vested right in the title of "surgeon." The argument was that the British Pharmaceutical Society had created the title of Pharmaceutical chemist, and had given it whatever value it might possess. The London College of Surgeons, we imagine, makes no pretension of having created the title of surgeon; consequently it does not strike us that the cases are parallel.

Medical Gleanings.

An International Medical Congress is to meet in Brussels on September 19 of this year. It proposes to give its opinion on the following sixteen subjects:—On the prophylaxis of cholera; on alcohol in medicine; the inoculability of tuberculosis; anesthesia in surgery; the dressing of wounds after operations; on lying-in institutions; the vaso-motor nervous system; the value of experiments on artificial circulation; the prophylaxis of phosphorus poisoning in the arts; the organisation of sanitary bodies; the brewing of beer; the military relations of optical defects; the means of measuring the acuteness of hearing; the military relations of aural defects; the universal pharmacopoeia; is it desirable to extend the use of chemical radicals in therapeutics?

The faith manifested by the Peculiar People waxed brighter in proportion to the trials with which it is met. They have lately taken a large house in Tower Street, which is to be termed a "House of Faith," for the reception of such sick as are considered hopelessly incurable, to be healed by the prayer of faith." This proceeding can hardly offend even the "regulars," unless indeed the "prayer of faith" should prove successful. In that case it will be termed *quackery*.

A new trouble is brewing for the Australian doctors in the invasion of their happy hunting grounds, not by women, but by Chinamen. According to the *Melbourne Medical Record* Doctor John Chinaman applied to the Victorian Medical Board lately for a license to kill, *secundum artem*. John held a diploma from Canton, and he was prepared to distinguish himself in the colony. "Englis doctor," says John, "too much cuttee—cuttee, Chinaman doctor no cuttee—Chinaman doctor velly good doctor for de wife and de child, but he no good doctor for de public-man and de burying-man. Chinaman doctor get no Clubs—no Hospital—he no kill-doctor." For the moment, however, John is checked. On asking him a few questions his ideas seemed a little confused between chicken-pox and small-pox, typhoid and typhus, and such like technicalities, due

perhaps to an imperfect acquaintance with the English language. Whereupon Surgeon Gillee addressed the candidate in the purest Chinese he could command, urging him to "Cut-him-stuckee, John;" which John was fain to do. In the neighbouring colony of New South Wales, however, it is said, Dr. George On Lee, a Chinese doctor, is acquiring considerable reputation, "by his gentlemanly deportment and the suavity of his manners," as a paper records in which On Lee advertises.

It is reported that Madame Bres, the first lady to obtain a medical degree at the College of the Sorbonne, Paris, has declined an offer of 40,000 francs a year as physician to the Sultan's harem, on condition of never going outside the building. She would be willing to attend the harem, but would practise in Constantinople like other doctors. Such a reply was probably a surprise for His Majesty the Sultan. Doubtless he thinks his harem is the highest pinnacle of earthly bliss. Madame Bres, however, had judgment enough to see that "fetters, though made of gold, are fetters still."

The last census taken in the United States shows that there are 625 women practising the medical profession in that country.

The General Medical Council, which has been sitting in London recently, found much of its time occupied with a discussion on the admission of women to registration. The Lord President of the Privy Council had applied to the Medical Council for advice on this point, and although one or two members of the latter body were desirous to decline the discussion of the question, their uncorroborated proposal was over-ruled. Dr. Andrew Wood, of Edinburgh, argued warmly against the admission of women to the profession. He argued thus, he said, because he loved the female sex, and wished to save them from the cruel hardships they must pass through if they entered the medical career. Sir Dominic Corrigan was less chivalrous, though perhaps more diplomatic. He would place no obstacles in the way of the women, lest by resisting an agitation they should feed it. He would, however, sooner see his dearest daughter in her coffin than in practice as a doctor. Give to women a fair field, he said, and the agitation would soon disappear. Dr. Humphry, Dr. Rolleston and Sir Wm. Gull were the chief advocates of a liberal policy towards women. Sir Wm. Gull disposed to a great extent of Dr. Wood's arguments by remarking that there was no intention of making a conscription of women and forcing them *volens volens* into the terrors of the medical profession. Ultimately 14 votes to 7 were given in favour of a dignified and practical reply to the letter from the Lord President of the Privy Council. This set forth the Council's opinion that medicine was not precisely a profession adapted to women; but they were not prepared to recommend the exclusion of women from its practice. If existing universities and licensing bodies continued to decline the examination of women the Government might invest the Medical Council itself with power to institute a special examination. They thought, however, that the medical education of women should be kept entirely separate from that of men, but that the courses should in no wise differ. This resolution is a very important one, and will in all probability lead to the opening of a path towards medical registration for women who desire it. The fact that at this moment there are twenty-four ladies studying for the profession in the London School of Medicine for Women, Henrietta Street, Brunswick Square, is a sufficient indication of the intention of the sex itself.

The following curious advertisement appeared recently in an evening newspaper of Washington, America:—

WANTED.—The front teeth of a girl fourteen years of age. Will pay liberally and replace artificially. Apply, after 8 P.M., at Dr. —

There did not appear to be in Washington at that moment any poor "miserable" of fourteen years of age reduced to the condition of Victor Hugo's heroine Fantine; so a few days after the "doctor" advertised again, offering fifty dollars for "a" front tooth. The explanation of this villanous advertisement seems to have been that the doctor had a rich patient of about the age named who had lost a front tooth, and whose friends

were willing to pay handsomely if the injury could be repaired. The doctor wanted to try the old experiment of transplantation, and it was thought that some family in the city might be willing, by reason of poverty or cupidity, to sacrifice a daughter's comfort. Seldom has the insolvency of wealth been so glaringly displayed. We are pleased to say that other papers took up the subject, and very plainly threatened the advertiser with a prosecution which would probably land him for a long term in the city prison if he succeeded in his intentions.

并 述

We are not opponents of vaccination, but for common decency's sake we hope to see no more paragraphs similar to the one below, which we cut from the *Medical Press* of July 7th:—"A numskulled fanatic ecclesiastic of the name of Hume-Rothery—a 'Reverend' advocate of law-breaking—is spending his money, or that of some equally wound-headed persons, in circulating an anti-vaccination post-card to every parent whose name occurs in the columns of the daily papers in connection with a birth. At the risk of being officious, we may venture to remind the 'Reverend' monomaniac that there are several *ladies* on his post-card effusion, and that the *Reverend* *ladies* may as certainly be broken on paper as by word with the law. We are not at all in sympathy with the harsh of Mr. Hume-Rothery, or to aggravate the bitterness of his melancholy lot. Poor man! he is the husband of Mrs. Rothery, of Contagious Diseases notoriety. Shall we add one drop to his brimming cup of misery? Never!!"

The error in regard to the commandments is perhaps a sign of this writer's superiority, but he might be careful in the use of his prepositions. It is not a mark of intelligence to employ them in a muddled fashion.

* *

Antiseptic surgery, initiated by Professor Lister, of Edinburgh, has now been very widely introduced abroad, as well as at home, and a recent visit made by Professor Lister to Munich to inquire into the mode in which the system is carried on upon the Continent was a sort of triumphal progress. Professor Lister says that he finds carbolic acid to be on the whole preferable to salicylic acid, after a careful trial of both.

* *

The death of Mr. James Fernandez Clarke, M.R.C.S., who was for more than thirty years on the staff of the *Lancet*, took place at his residence, 23 Gerrard Street, Soho, on the 6th inst. Mr. Clarke was noted as the author of "Forty Years of Autobiographical Reminiscences of the Medical Profession," and many other works. The esteem in which he was held by his fellow practitioners was shown by 160 of them presenting him with a testimonial on his retirement from the staff of the *Lancet*.

The following letter has been addressed to the magistrates of Leicestershire and of Northamptonshire by Mr. Joseph Young, public analyst for those counties:—

Sir:—As it is probable that some allusions may be made by the magistrates, at the next Quarter Sessions, in reference to some recent analysis of coffee made by me for the county of Northampton, I should be glad to give a brief explanation as to the origin of the unfortunate error into which I have fallen. The coffee referred to was, as is customary, reduced to their ash in a furnace, especially adapted for that purpose, but, from repeated ignitions, the interior had unconsciously become, and fell into the fragments of its inner surface became detached by the heat, and fell into the furnace, and, as the coffee was in the incineration, were found to contain certain elements as foreign to the ash of coffee as they are the invariable constituents of coarses, which, being formerly used in the kitchen, had led me to conclude that such was the case in this instance, and not being aware of the error, I referred to it. It will thus be seen that the error did not arise so much from a want of analysis as from a wrong conclusion deduced from its results. Nevertheless, I am sensible that the public may be somewhat disgruntled by placing my resignation as county analyst in your hands, although, for the many years I have been engaged in scientific investigations this is the first time I have done so. My results, though frequently confirmed, have been successfully disputed.

The Northamptonshire magistrates discussed for some time whether they should accept Mr. Young's resignation or dismiss him. By majority the resignation was accepted. Another discussion followed as to whether the costs in the recent cases which had failed, amounting in all to £37. 12s. 4d., should be claimed from Mr. Young. It was not clear whether such a claim could be legally maintained, and the question was referred to a committee.



LONDON BANKRUPTCY COURT.

SPECIAL REPORT.

R. CONDY, Drug Merchant, Garlick Hill and Duke Street,
Adelphi.

The debtor, trading as Condy Brothers & Company, had filed a petition under the liquidation clauses, and at the meeting of its creditors the following resolutions were passed:—The creditors and contributory recently held a statement of affairs was produced showing unsecured debts, £3,047, 18s. 7d.—and debts for which security is held, 206*l.* 9*s.* 9*d.*, against assets, 603*l.* 5*s.* 10*d.* Resolutions to liquidate by arrangement were come to, Mr. W. Liddall, accountant, Union Court, Old Broad Street, being appointed trustee, with the following committee of inspection:—Mr. W. Humble, 43 Mincing Lane; Mr. G. Bedford, 27 Lombard Street; Mr. L. Schlesinger, 42 Wilson Street, Finsbury; and Mr. J. Theodoridis, of 23 New Broad Street. The case came before Mr. Registrar Keene on June 22, when, upon the application of Mr. Philp, His Honour ordered the resolution to be registered.

H. APPLEBY, Chemist and Druggist, 47 Mortimer Street, W.

THE bankrupt, formerly of Tottenham Court Road, d. Pinner, has been several months before the Court, and the adjourned sitting for his public examination took place on July 3, before Mr. Registrar Spring Rice. Debts, 645*l.*, assets, 442*l.* Mr. Piessé, who appeared for the trustee, said that he was still instructed to oppose on the ground of the unsatisfactory nature of the accounts. The matter had been before the Court and also the Lords Justices in reference to the bankrupt's dealings with a money lender named Brown, and July 15 had been appointed for taking the accounts under the Lords Justices' order. His Honour observed that when he heard the case he thought there was ground for questioning whether advances had been paid, but the bankrupt set them out in his accounts, which was rather against him than otherwise. He did not see any reason for again adjourning the case. The bankrupt accordingly passed his public examination.

T. W. FENWICK, Chemist and Druggist, Stamford.

THE bankrupt, lately carrying on business at 22 Coleman Street, City, had, in the first instance, presented a petition for liquidation, but at the meeting of creditors held on March 11 no resolution was come to, and adjudication followed in the Peterborough County Court on the petition of Mr. Henry Hand, of 22 Coleman Street. The proceedings have since been transferred from Peterborough to London, and the meeting for public examination took place on July 8, before Mr. Registrar Brougham. The unsecured debts were returned at £662. 8s. 7d., other liabilities 450*l*., and debts payable in full 75*l*.; against assets consisting of book debts, 338*l*. 5s. (estimated to produce 100*l*.); furniture, fixtures, &c., at 22 Coleman Street, estimated at 80*l*. The following are in the list of creditors:—

	£	s.	d.
A. B. Ewen, Long Sutton, Lincolnshire	190	0	0
T. Young, Cornhill, Bury St. Edmunds	80	0	0
R. Young, 3 Brunswick Place, Forest Hill ..	80	0	0
— Greenhill, 62 Gracechurch Street	50	0	0
H. D. Viques, Miles Lane, E.C.	50	0	0
— Thierly, Fingate Street	47	6	0
John Park, Southend	35	0	0
C. S. Goodwin, Wray Crescent, Tollington Park ..	35	0	0
O. Lofthouse, 51 King William Street	25	0	0
Lloyd & Son, Thames Road	22	12	4
G. C. Crowe, 2 Gloucester Road, Newcastle ..	20	0	0
B. Wright, Siltton	10	0	0

Mr. Hand, who appeared for the trustee (Mr. Sperring, accountant, 26 Philpot Lane), said that a private inquiry was pending, and he therefore asked for an adjournment of the bankrupt's public examination. When the evidence was complete it would be necessary to submit it to the Court. His Honour: You must give me some more details. Mr. Hand said that if the bankrupt now passed, the only result would be a much longer private inquiry. Mr. G. Lewis, who supported, said that the bankrupt had already been six hours under examination at a private sitting. He asked that he might now be allowed to pass. His Honour: I have heard no reason why he should not, except that there is a private sitting pending, which, for all I know, may relate to the man in the moon. Examination passed accordingly.

ALBERT HEATH, Chemist and Druggist, 11 Castle Street, Leicester Square.

THE debtor has presented a petition for liquidation, and on June 19 Mr. Sherwood applied on his behalf, with the concurrence of creditors, for the appointment of Mr. Bradbourn, builder, Castle Street, Leicester Square, as receiver, and for an interim injunction staying proceedings at the suit of a creditor. The debts were estimated at about 450*l*, and assets, 60*l*. Mr. Registrar Spring Rice granted the application. The meeting of creditors was held on June 23, when a statement of affairs was produced, showing debts, 483*l*. 13*s*. 11*d*, and assets, 53*l*. 11*s*. A resolution was passed for the acceptance of a composition of 1*s*. in the pound, payable within three months from the date of registration. The following is a list of the creditors:—

	£	s.	d.
F. C. Heath, Bishop's Stortford	274	2	0
Langton & Co., 274 Upper Thames Street ..	84	4	8
G. Langham, 12 Castle Street, W.C. ..	39	10	0
H. J. Bradbourn	32	0	0
J. Graham, 56 Upper Kennington Lane ..	10	13	0
Maw, Son & Thompson, Aldersgate Street ..	10	8	0

A. & M. ZIMMERMANN, Aldgate Buildings, Fenchurch Street.

This case was noticed in our last issue. The debtors, Ferdinand Auguste Zimmermann and Moritz Zimmermann, traded in partnership as above under the firm of A. & M. Zimmermann, as importers of fine chemicals and chemical apparatus, drug, and commission merchants. They filed their petition for liquidation on June 4, and subsequently Mr. W. Edwards, accountant, 18 King Street, Cheapside, was appointed receiver and manager. The liabilities were estimated at 100,000*l*, the following being returned in the list as creditors:—

	£	s.	d.
Matthew Clark	15,000	0	0
La Frenz & Co., 19 Oullum Street	9,200	0	0
T. T. Koyke & Co., Hamburg	5,000	0	0
Carilian & Beaumier, Paris	4,174	0	0
A. Schaaffhausen & Co., Dankersfeld ..	2,137	0	0
W. G. Gildersleeve & Co., 100 St. Marks Street ..	2,100	0	0
J. C. Cesar, 17 Gracechurch Street	2,000	0	0
Röding, Meichers & Co., Billiter Square ..	2,000	0	0
Wadekin & Co., Great Tower Street	2,000	0	0
N. Cohen, 4 Bishopsgate Street Within ..	2,000	0	0
T. Jacoby, Rue d'Hautville, Paris	1,900	11	7
G. B. Rosbach, Barmen	1,864	0	0
Versingten Chemischer Fabrik, near Stettin ..	1,667	3	0
Leopoldshall	915	0	0
Banque Centrale Anversoise, Antwerp ..	900	0	0
Widemann & Co., 3 Love Lane, E.C. ..	784	6	4
Comptoir d'Escompte de Paris	721	3	0
International Bank of Hamburg and London ..	661	0	0
C. Schlessen, 8 Bond Lane	500	0	0
Jacob Zimmermann, Cologne	470	0	0
J. Macquon & Co., 11 Old Jewry Chambers ..	400	0	0
Wiltmann & Co., 22 Great Tower Street ..	430	7	8
E. Warburg, Berlin	379	19	6
J. Morter, Forest Lane, 4 Colford Street ..	368	15	0
W. Charity, 37 Fenchurch Street	341	11	5
H. Rubock, 14 Mincing Lane	314	6	2
Atenfabrik Chem. Präparate, Hamburg ..	296	0	0
L. Mans, 3 Passage Saunier, Paris	292	8	0
G. Rhodine, Linz a/s, Reim, Germany ..	245	10	8
Coopricke Chemische Fabrik, Berlin	200	0	0
J. J. 22 Old Street	144	0	0
J. Kavalier, Szava, Bohemia	134	4	3
Richard Hains & Son, 33 Cornhill	127	16	2
C. Bremen, 9 Mincing Lane	105	8	1
L. F. Kintschke, Hamburg	74	0	0
F. W. Brown, 59 Myddelton Street	62	4	0
Charles T. White & Co., New York	67	13	8
Demeler & Co., Etolp Lane			

	£	s.	d.
Königliche Porzellan Manufactur, Meissen ..	57	5	10
S. Bidwell & Co., Kingsland Road	56	9	4
Brest & Gelpcke, Berlin	47	0	0
British Seaweed Company, Glasgow	46	0	0
Emile Fuhau & Co., Stutzerbach, v/l, Immenau ..	40	2	3
Grudecke & Co., Leipzig	40	0	0
Delhi & London Bank (Limited)	39	15	8
E. Conor & Co., Rue Barbele, Paris	38	3	2
H. A. Dreyprung, Lahr, Baden	37	10	5
Boomer & Co., Rotterdam	37	5	0
Kunheim & Co., Berlin	35	4	0
W. S. Squire & Co., Stratford	33	0	0
Ede Haas, Lästov, Hanover	30	13	8
Hartmann & Haues, Hanover	30	4	0
Helm & Sohn, Alexanderstrasse, Thuringia ..	29	12	11
J. Desage, Heidelberg	28	15	0
C. H. F. Müller, Hamburg	25	15	9
P. & P. W. Squire, 277 Oxford Street ..	25	14	8
Otto Grunhah, Götting, Leipzig	25	0	0
H. T. L. Stender, Gross Rildten, Thuringia ..	23	4	9
D. J. Ginhery & Co., Wilson Street, Finsbury ..	22	18	11
A. L. Czed, Haida, Bohemia	20	18	11
H. A. Robbing, Arnstadt, Germany	17	19	0
W. Mather, 14 Bath Street, E.C.	15	15	9
Megesson & Co., 147 Cannon Street	15	14	9
M. G. Brune, Verrie de Rougement par Claves ..	15	0	0
A. Petri & Co., Stockholm	13	17	9
F. A. Schumann, Berlin	13	11	9
J. L. Hancock, 266 Goswell Road	12	12	0
Zahn & Sohn, Langeman, Austria	11	5	2



SYNONYMS.—WORM SEED.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—One of your correspondents in last month's CHEMIST AND DRUGGIST appears to think that Sen. Hyocse, are called worm seeds from some supposed anthelmintic properties. This is a mistake, since they are so called by Lancashire people because they are believed to cure toothache by "drawing worms" out of the teeth and gums. They are used in the following manner:—A few red cinders are placed on a shovel, some of the seeds sprinkled upon them, and a basin inverted over the whole. After a few minutes the basin is turned upwards, a little hot water poured in, and the vapour which arises is inhaled by holding the head over the basin, and covering with a towel. When the head and towel are removed a number of worm-like substances are found floating in the water, and these are confidently asserted to be real worms, and to have been drawn from the gums and teeth. Some time ago I made a few experiments to clear up the mystery, and to prove to a lady that the "worms" were not worms, and that neither did they proceed from the patient's mouth.

A few seeds were placed on an iron plate, over a gas lamp, when the only effect of the heat was to char the seeds. When, however, a few seeds were thrown upon the plate previously heated, they instantly decrepitated and flew in all directions. Upon throwing more seeds on the plate and covering them with a beaker, the latter was found on removal to be bedewed with moisture, and to have adhering to its sides a number of these wonderfully worm-like substances. On pouring water into the beaker these became detached from the glass, and gradually rose to the surface.

I thus proved that the worms had nothing to do with causing toothache or tie, and that they did not originate in the mouth.

When a number of these substances were removed from the water and examined with a lens, they were found to be the curved embryo of the seed, which is projected with considerable force, when sharply heated, from between the albumen through the hilum.

The seeds found in the water are scarcely altered in appearance, but when dissected they are found to be minus the embryo, and some few of the seeds are found with the embryo protruding through the hilum, proving conclusively the nature and source of the worms.—Yours faithfully,

Buxton, July 1, 1875.

J. C. THREEH.

THE ADULTERATION BILL AND WHOLESALE HOUSES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I have sent the enclosed to a contemporary of yours, but it cannot appear in print until too late for the next issue of your most interesting and valuable journal.

It concerns the "chemist and druggist" as well as the tea trade, and it would be a pity that they, as well as we, should once more wake up under an Act of Parliament when it has become the law of the land.

The bill of 1872 was read a first time on February 13, and passed its thirteenth and final stage—the Royal Assent—on August 10. There is less than one page of Hansard (1,507) about it (and the representations then made have proved false), and who knew anything of it until we were all in a mess together. The present bill, read on February 12, has gone through ten stages, and must have five or six more.

Yours, sir, truly,

39 Mincing Lane, E.C.:
July 9, 1876.

R. M. HOLBORN.

SIR,—This bill was printed on February 12, after the first reading. It has been reprinted March 4, May 13, May 28, June 15, and on Monday last, July 5, after bringing up the Report of Committee in the Lords.

It now stands for the third reading, with promises of variations in Clauses 3, 4, and 5 by the President of the Privy Council in deference to the prejudices of certain peers, and to the detriment of the trader. The attention of the wholesale dealer and manufacturer is urgently required to the addition made in the Lords to Clause 27.

By it the original vendor is rendered liable for the costs, fines, imprisonment, loss of repute and trade incurred by the shopkeeper, who may allow judgment to go by default.

To avoid this monstrous result, the authors of the bill rely upon the proviso in Clause 27* in the last three lines.

I absolutely deny that this will meet the case. When I say so I do not put my judgment into competition with that of Queen's counsel who advise her Majesty's Ministers. They have opinions of what the clause means, and how it ought to be administered. We have dearly purchased knowledge of how the Act of 1872 was worked. We saw and heard, with our own eyes and ears, four magistrates at Axburgh deny to defendants the only protection specially designed for them in the Act of 1872. See evidence of the eminent attorney who appeared in the case, Blue Book 262, question 6,418. Messrs. Daw & Son were both in court, as were also R. M. Holborn and Robert Holborn. Now it might have been shown in this case "that the conviction was wrongful," but if the demand for the application of Clause 19 had not been made and refused, and the conviction had merely followed the evidence, I do not believe that it could afterwards be held that the conviction was wrongful," as provided in Clause 27 of the present bill.

*Nothing in this Act contained shall affect the power of proceeding by indictment, or take away any other remedy against any offender under this Act, or in any way interfere with contracts and bargains between individuals and the rights and remedies belonging thereto. "Added in the House of Lords:—Provided that in any action brought by any person for a breach of contract on the sale of any article of food or of any drug, such person may recover alone or in addition to any other damages recoverable by him the amount of any penalty in which he may have been convicted under this Act, together with the costs paid by him upon such conviction, and those incurred by him in and about his defence thereto, if he prove that the article or drug the subject of such conviction was sold to him as and for an article or drug of the same nature, substance and quality as that which was demanded of him, and that he purchased it not knowing it to be otherwise, and afterwards sold it in the same state in which he purchased it; the defendant in such action being, nevertheless, at liberty to prove that the conviction was wrongful, or that the amount of costs awarded or claimed was unreasonable."

The wholesale trade would welcome a practical Act, in place of the four abortive Acts, quite as much as Her Majesty's Ministers, who would wear the laurels of success.

The authors of the bill deem it sufficient to provide an Act to be administered by capable and intelligent men. We know that the Act requires to be adapted to such comprehensions and intellects as those exhibited at Axburgh.

As the bill at present stands the shopkeepers may act exactly as the grocer Pugh did at Wolverhampton—adopt no means of defence, though he had forty-eight days' notice; he may pass by all the provisions of Clauses 5, 7, 13, 20, 21, and 22, and then come down upon the original vendor under Clause 27.

It is my duty to call attention to this clause, which has been so extended in the Lords. I cannot refrain from saying that the wholesale dealer in every trade will have fairly earned all the penalty he may find himself subject to under this clause when he is rudely awakened by and-by from the apathy which he has displayed during the course of the bill.

I was deputed by the general committee of my trade to the sub-committee of three in May, 1874, to look after this matter. Neither Mr. Frederick Morrison, of the National Chamber of Trade, nor myself, have spared any exertion, day or night, in our attention to this most serious matter.

What support we have had may be best judged by the following fact.

During the six stages of the bill in the House of Commons, and some fifteen attendances, when the bill did come on and when the bill did not "come on," we met, on one occasion, one member of the tea trade (Mr. Smith Harrison) in the lobby of the House, but we never so much as heard of a baker, butcherman, chemist, or dairyman.

Out of some 43 or 45 metropolitan and home counties members, as far as I could ascertain, not 20 were interviewed by the whole London traders put together.

In conclusion let me point the wholesale houses to two facts:—1. In the Committee last year, on both sides of the House of Commons, and by all parties in the Lords, there has been one unanimously avowed desire "to get at the wholesale dealer." 2. Clause 9 in the bill has been referred to by the Right Hon. Geo. Selator-Booth in answer to those who desired a more general application of the Act.

I have one hope. In twelve years, from 1860 to 1872, four Acts of this mischievous nature have failed. It is proposed now to repeat them; the Lords do not take warning, and all their so-called amendments are calculated to make the Act odious, unjust, unpractical, and unworkable.

Yours, sir, truly,

39 Mincing Lane,
July 9, 1876.

R. M. HOLBORN.

MISTAKEN HIS VOCATION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I thank you very much for your kind notice of my feeble poetical efforts, termed the "Poetry of Health." Having to work very hard for my living, I charged one penny for the cost of printing, and know that doctors are very jealous, which hinders much their useful progress. I come of a medical family, have lived in good society, by law shut out from being that my fathers got their living at. Twice I went up for the modified, but managed to fail each time I tried; though gaining Latin prize at school the examiners thought me almost a fool. Query if questions furnish a test among students who is the best; some excel in Latin or Greek, others can French most fluently speak. Some dull scholars in the classics are good at figures or mathematics, and those who scarce can write or read, may in athletic sports or games succeed. Practical knowledge you will find is most useful for body and mind, using the needle or the spade of first importance should be made. Hedged round by modern legislation it's hard work to avoid starvation; licenses, fees, rates, and taxes, sometimes ruffled your temper waxes; you mustn't do this and can't do that, really one hardly knows what to be at.

Yours obediently,
ALBERT AGER.

June 1, 1876.

Mr. Thorpeworth.
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ELIXIR OF HOPS.

IN the *American Journal of Pharmacy* Mr. J. B. Moore gives the following formula for an elegant elixir:—

B. Pulv. Hops, No. 90, 5il. troy,
 " Cloves, No. 60,
 " Canela, " 30, 3i.
 " Cinnamon, No. 60, grs. lxxx.
 Oil of Orange (fresh), 5ssil.
 Sugar, 3xii.
 Alcohol,
 Water, aa, q. s.

Mix the powders. Then to 20 fluid ounces of a mixture, consisting of 10 parts of alcohol and 12 parts of water, add the oil of orange; shake well and moisten the powders with 2 fluid ounces and a half, or a sufficient quantity of the mixture. Set it aside in a closed vessel to macerate for 24 hours; then pack it firmly in a cylindrical glass percolator, and pour upon it, first, the remainder of the menstruum, and when this has all been absorbed, continue the percolation with a menstruum consisting of 10 parts of alcohol and 12 parts of water, until 24 fluid ounces of percolate have been obtained. To this, in a bottle, add the sugar and shake the mixture occasionally until the sugar is dissolved, then filter through paper.

In the elixir, as thus prepared, the aroma and peculiar bitter taste of the hops are very strongly marked; but the latter so nicely blended with the flavouring ingredients as to be quite agreeable to the palate.

Each fluid ounce contains the active properties of thirty grains of hops, which is very nearly half the strength of the official tincture.

The usual dose for an adult would be from a dessert spoonful to a table spoonful every two or three hours, or as necessary.

It is, I presume, hardly necessary for me to say that it is absolutely essential that the oil of orange used in making this elixir should be of the very best quality and fresh. There is hardly an essential oil more unstable than the oil of orange. To keep it sweet for any length of time is almost an impossibility, unless mixed with a portion of alcohol. I am always very careful to select a first-rate oil, and mix it at once with an equal bulk of stronger alcohol (as this is a convenient proportion for use) and set it aside in a dark, cool place, and, in this way, I have no difficulty in keeping it a long time unchanged.

When measured for use, it should be vigorously shaken and poured out very quickly to insure exact proportions.

A DELUSION EXPOSED.

A "Spirit Photographer's" trial has taken place before the Correctional Tribunal of Paris, which has resulted in the conviction of certain "Spirit Photographers" for swindling. Buguet, a photographer, of No. 5 Boulevard Montmartre, allied himself with M. Leymarie, the editor of the *Revue Spirite*, who wrote about him and published fac-similes of his portraits, and with an American named Firman, from whom he learned the art of persuading people that he could, if they only willed strongly enough, conjure up and photograph a likeness of any deceased relation or friend. For a long time the firm did a large business. Twenty francs was the ordinary fee, but many wealthy people voluntarily paid 2,000, 3,000, and even 4,000 francs. Never was fraud more clearly proved. The operator's spirit-box was produced in court; it contained hundreds of portraits of men, women, boys, and girls of all ages. When customers came desiring spirit-portraits, a young lady, who acted as cashier, adroitly engaged them in conversation in the waiting-room, and generally contrived to find some indications of the physiognomy of the person whom it was desired to evoke. Then one of the numerous heads was selected, stuck upon a doll dressed up in muslin, and a hazy portrait of a spirit was produced from it. Buguet guarded himself by saying he could never guarantee a likeness, because much depended on the strength of faith of the applicant, and, moreover, spirits were very capricious, and sometimes when one was called for another would come; but in very

many instances the force of imagination was so strong that his dupes believed they saw the portraits of their relations. They burst into tears, fell upon their knees, kissed the photographs, and were profuse in expressions of gratitude to the professor, as well as lavish of gifts to him. Notwithstanding the palpable exposure of the imposture in open court, a host of respectable witnesses, including a Russian marquis, the Comte de Bullet, Mr. Sullivan (formerly United States Minister at Madrid), two French colonels, and several ladies, appeared for the prisoners, and protested that they really had seen unmistakable portraits of deceased relatives. The counsel for the defence, M. Lachaud, spoke for two hours, and alluded to Moses, Isaiah, Tertullian, and other eminent authorities on spirits. The Court, however, thought the charge fully proved, and sentenced Buguet and Leymarie to one year's imprisonment, and Firman to six months.—*London Medical Record*.

TRADE MARKS IN GERMANY.

WE give a translation of the conditions of the new law relating to trade marks in Germany:—

"In pursuance of Article 20 of the Imperial Law of November 30, 1874, the Tribunal of Commerce of Leipzig is made the central authority for the registration of trade marks of industries not domiciled in Germany.

"It is expected that numerous applications for registration of marks of foreign manufacturers will be applied for through advocates or German merchants, and it is therefore desirable to remind applicants of the conditions under which registration is placed with the Tribunal of Commerce of Leipzig, and with which those interested will be required to comply.

"The conditions are as follow:—

"In addition to the proof of reciprocity required by the resolutions contained in the report of the laws of the Empire mentioned in the article cited, it is necessary to furnish:—

"1. The demand for registration, with the declaration that in any actions relating to the law applying to trade marks the applicant submits himself to the jurisdiction of the Tribunal of Commerce at Leipzig.—Article 20, No. 1.

"2. Proof of the applicant's identity with the firm, or at least—if in his country a register of firms be not kept—proof that the applicant is the real proprietor of the house which he represents.—Article 1, cl. 1 of Article 20.

"3. Proof that the conditions of protection demanded are complied with in the foreign country concerned.—Article 20, No. 2.

"4. The production of (a) an exact copy of the trade mark; (b) a list of the goods on which the mark is used.—Article 2 of the law.

"Remarks.—The copy of the mark must not exceed three centimetres in height or in width, and durable paper should be used. Four copies must be sent, not pasted on paper or anything else. The applicant can also send the block or stereotype used in the printing as proof of the mark. If clearness requires it, the manner in which the mark is used must be shown.—Order of the Federal Council of February 8, 1875, and repeated No. 7, p. 123, 123rd year of the 'Feuille General de l'Empire Allemand.'

"5. The application for registration must bear the signature of the firm, duly authenticated before a notary or a tribunal.—Article 2 of the law, and No. 2 of the Ordinance.

"6. The application must be accompanied by the payment of the minimum sum of 56 marks, to cover cost of registration (Article 7) and expense of the notice.—Article 6 of the law, and resolution of the Federal Council, and cited in the 'Feuille,' p. 131, 1."

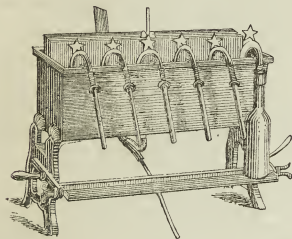
CIVIL SERVICE TRADING.—At a meeting of the Committee of the National Chamber of Trade, held on July 7, it was resolved, upon the motion of Mr. Gotto, seconded by Mr. Debac:—"That the best thanks of this Chamber be given to Sir Thomas Chambers, Q.C., M.P., and William Forsyth, Esq., Q.C., M.P., for their able speeches in the debate of the 2nd inst., and for setting forth so clearly the objections urged against the system of trading now carried on by the Civil Service Co-operative Societies."



SHERWOOD'S AUTOMATIC BOTTLE-FILLER.

This is an American invention, and is employed by all the great patent medicine firms of the United States who have to bottle liquids to any great extent. It is now to be seen and bought at the warehouse of Messrs. Newbery, 37 Newgate Street, London.

The tank and framework generally is of iron; the interior of the former is lined with porcelain. The liquid to be filled is supplied through a hose from a barrel or whatever its reservoir may be. It is then drawn through the series of syphons shown in the engraving into as many bottles. These syphons are con-



structed with a spiral spring and valve, so that the latter is only opened when the spring is pressed by the lip of the bottle, and is closed again when the liquid in the bottle reaches the neck. Thus it will be obvious there can be neither waste nor mess in filling after the apparatus is once started, and, besides, a perfect uniformity in the quantity of liquid bottled is attained.

The idea is for the filler to place his bottles one after another on the platform provided for them, and set the liquor running. He has a supply of bottles by his side, and afterwards has only to continue passing from left to right, substituting empty bottles for the full ones, which he removes. For bottling wines, patent medicines, sauces, inks, and many other fluids, the machine seems to offer very considerable advantages in speed and also in freedom from waste. We advise those concerned to make acquaintance with its principle.

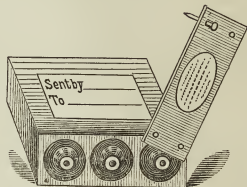
MOTTERSHEAD'S PREPARATIONS OF SALICYLIC ACID.

The accumulating testimony to the value of salicylic acid as an antiseptic indicates that a great future awaits that chemical, and we are not surprised to find pharmacists turning their attention to the art of presenting it in suitable forms. Messrs. Mottershead & Co., of Manchester, are first in the field with their Salicylic Acid Lozenges. The lozenge form is a specially good one for allowing contact of the remedy with the membranes of the palate and throat; and in sore throats and mouths these will no doubt be found useful. For the internal administration of salicylic acid they will also prove convenient if the makers will announce the exact dose contained in each. Messrs. Mot-

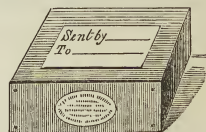
tershead are bringing out also some salicylic toilet water, toilet powder, and dentifrice, but we have not yet seen samples of these. We should not omit to mention that the lozenges are very pleasant to the taste, and are sold in bulk or put up in boxes.

THE PATENT SAFE-PACKING SAMPLE BOX.

A box for transmitting bottles of liquids with perfect safety any distance, and through any rough usage, is a desideratum which will be valued by firms in various branches of business, and not the least, we imagine, by many connected with pharmacy.



The box, of which engravings are shown, is a French invention, introduced into this country by Messrs. Alfred Smyth & Co., of Paris, and of 28 Fish Street Hill, London. The box itself is a solid block of wood, into which cylindrical holes have been bored by machinery for reception of bottles. Corked bottles are supplied with the boxes, and each bears a blank label upon which to specify the contents. A particular novelty in this invention is the packing employed, which is cork-dust, and which, from its great elasticity, prevents all danger of breakage arising from any possible concussion to which the box can be subject. We ourselves tested a box containing four bottles by dropping it from a fifth-storey window in Cannon



Street to the pavement below, which test left the box and bottles as perfect as when they started.

The consignees supply these sample boxes in various sizes, varying from boxes containing one 30-gramme (or 1-oz.) phial, to six 500-gramme (or 17-oz.) bottles. The boxes are already in use among wine, spirit, and oil merchants, and we notice them here because we think many of our readers will be glad to use them for sending out samples of pharmaceutical preparations. As shown in the engraving, each box bears an address label, and is thus ready for immediate use.

EXPLOSIVE COMPOUNDS.—A dispenser in Vienna received the following prescription:—Chromic acid, eight grains; glycerine, one drachm. External use. The dispenser dissolved the acid with a little water in a phial by a little shaking; the glycerine was then poured in, and the phial again shaken. Thereupon the compound exploded with a very loud report, and was carried with great force to the ceiling of the shop. The phial, which did not break, became coated with a black pigment, and remained in the hand of the frightened dispenser.

Druggists' Sundries.

A NEW TOWN in the California quicksilver region has been named Mercury.

If a man really wants to find out what's in him, let him go to sea. The first rough weather will generally enable him to ascertain it.

It is said that the late Colonel Sam. Pike, of Ohio, started no less than forty-two papers during his lifetime. It must have taken a great deal of forty-two-ed, eh?—*Boston Post*.

A CORRESPONDENT of the *Medical Times and Gazette* says that castor or cod liver oil may be taken in a draught of frothy beer without the drinker being aware of its presence. This method, he says, also effectually prevents what the Americans call "unpleasant returns."

THE MEXICAN GOVERNMENT offers a prize of \$20,000 to the first quicksilver mine in the country that shall produce 500 flasks of that metal; and a metallurgist who is well acquainted with the resources of Mexico affirms that there are fifty localities where the thing can be done if proper steps are taken.

ACCORDING to the *American Chemist*, effervescent baths are now recommended by some French physicians. A certain amount of acid carbonate of sodium is dissolved in the water, and sufficient hydrochloric acid nearly to neutralise the sodium salt is added. Salts of iron and other salts may also be added if required.

IT IS WORTH KNOWING how to prepare nice senna. Take of leaves which have been exhausted by alcohol, and use them for an infusion to be made with boiling water. This infusion possesses purgative properties even more energetic than if made from the ordinary senna, and, in addition, it is freed from the disagreeable taste which has hitherto prevented senna tea from gaining so much popularity as it deserves.

TREATMENT OF ITCH.—It is well known, says the *Lancet*, that frictions with sulphur ointment may render much worse the various inflammatory affections of the skin which are excited by the presence of the acarus. To avoid this complication, the patient should use one part of stryax to two of oil of sweet almonds or olive oil. By this means the acarus is quickly destroyed, and the skin hardly irritated.

THE EUCALYPTUS is becoming quite the fashionable tree in the South of Europe. There are fine specimens in the public promenades of Nice and Cannes, and in many of the towns of Spain. Garibaldi is urging that it should be planted around Rome in order to prevent malaria, and his desires are likely to be fulfilled. Its health-giving properties, which were in course of discussion only recently, now seem to be fully admitted.

ANCIENT REMEDIES.—Scott's *Discovery of Witchcraft* (1584), quoted in the *British Medical Journal*, says:—"Charm against the bite of a scorpion—Say to an ass secretly, and as it were whispering in his ear, 'I am bitten by a scorpion.' Against the toothache—Scarify the gums in grief with the tooth of one that hath been slain. To heal the King's Evil—Touch the place with the hand of one that hath died an untimely death. For the heartache—Tie a halter about your head wherewith one hath been hanged."

MR. GABSIDE, of Southport, records in the *Pharmaceutical Journal* an interesting experiment by which he succeeded in reproducing some writing which had been so far obliterated as to be illegible by submersion in the sea in the wreck of the *Schiller*. The letter was carefully brushed over with solution of sulphocyanide of potassium (1 in 20), and then, still damp, held over a dish containing hot hydrochloric acid. The writing was thus developed of a deep red colour. The rationale of the process is this:—The iron of the ink is precipitated as peroxide upon the fibres of the paper, and remains when all other colouring matters are washed away. Being in an insoluble form, however, no effect is produced by the reagent until the fibres of the acid have rendered it soluble. Probably ferrocyanide of potassium would answer as well or better than sulphocyanide.

A NEW SUBSTANCE FOR CLARIFYING WINE.—Experiments have recently been made by B. Hoff with Austrian and Hungarian wines which show that kaolin can be employed for clarifying wine. A quantity of kaolin equal to one-half per cent. of the weight of the wine to be clarified is triturated with a little wine to a thin paste, and then added to the wine to be clarified and well mixed. If one-half per cent. does not produce the desired effect, as much more is added. If the wine clears slowly, it is well to stir up the kaolin in the barrel. The kaolin employed must not contain a trace of iron, otherwise it colours the wine. The iron is easily removed by treating with hydrochloric acid, which must afterwards be entirely washed out with water. The action of the kaolin is principally this, that it unites with certain protein substances that are suspended in the wine, and forms with them insoluble compounds that settle quickly. The kaolin occupies but little space after it has settled, and the clear wine can be drawn off to the last drop. If kaolin be added to the wine while fermenting it, it immediately becomes clear.—*Wine Trade Review*.

THE EXPLOSION which occurred in the chemist's shop of Mr G. D. Dows, of Boston, U.S., is thus described in the *Boston Journal of Chemistry*:—"Mr. Dows is known as a prominent druggist, owning a large and well-conducted establishment on the most frequented thoroughfare in Boston. At about six o'clock p.m. a rumbling sound was heard in the building, and immediately the whole structure was lifted from its foundations and fell into a mass of ruins. The destruction was instantaneous and complete, the walls, timbers, and everything contained in the building tumbling into a huge pile of rubbish. So sudden was the catastrophe that none of the occupants could escape or even move from their positions, and they were buried in the ruins. Three were killed instantly, and several others were seriously wounded. The investigations made by the municipal authorities failed to show the cause of the explosion, and it remains to the present time a mystery." After discussing various possibilities of its cause the editor of that journal thinks the catastrophe must have been occasioned by the vapour of ether. Mr. Dows had several bottles of this dangerous agent, holding five pounds each, in the rear of his store, or in the cellar, and the sudden breaking of any one of them by falling, or by pressure of the volatile liquid, would by the ignition of the air-mixed vapour be sufficient to produce the entire work of ruin.

A CORRESPONDENT sends us the following epitaph, written by a Dr. Godfrey, who died in Dublin in 1755:—

EPITAPHIUM CHYMICUM.

Here lieth to digest, macerate, and amalgamate into clay,

In Balneo Arenæ,

Stratum super Stratum

The Residuum, Terra damnata and Caput Mortuum,

Of BOYLE GODFREY, Chymist and M.D.

A man who in this Earthly Laboratory pursued various

Processes to obtain Arcanum Vitæ,

or the Secret to Live;

Also, Aurum Vitæ;

or, the art of getting rather than making Gold.

Alychymist-like, all his Labour and Projection,

as Mercury in the Fire, Evaporated in Fume when he

Dissolved to his first principles.

He departed as poor

as the last drops of an Alembic; for Riches are not

poured on the Adepts of this world.

Thence fond of News, he carefully avoided the

Fermentum in Effervescence, and Descriptions of this life.

Full seventy years his Exalted Essence

was hermetically sealed in his Terrene Matras; but the

Radical Moisture being exhausted, the Elixir Vitæ spent,

And exorcised to a Cuticle, he could not suspend

longer in his Vehicle, but precipitated Gradatim, per

Campanam, to his original dust.

May that light, brighter than Bolognian Phosphorus,

Preserve him from the Athanas, Empyrea, and Reer-

beratory Furnace of the other world,

Depurate him from the Fæces and Scoria of this,

Highly Rectify and Volatilise his æthereal spirit,

Bring it over the Helm of the Reort of this Globe, place

it in a proper Reipient or Crystalline orb,

Among the elect of the *Flora of Benjamin*, never

to be saturated till the General Resurrection, Defa-

gration, Calcination, and Sublimation of all things.



[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by L. de Fontaine-morou & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 33 Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

1844. G. T. Snelling, of Elith Terrace, Victoria Road, Upton Lane, Essex. Improvements in the treatment of animal blood; also of fibrous materials, and in the manufacture of manure therefrom. Dated May 19, 1875.
1850. W. Netherwood, of Huddersfield, Yorkshire, and B. Shaw, of the same place. Improvements in bottles and in stoppers for the same. Dated May 20, 1875.
1864. W. Jones and J. Walsh, both of Middlesbrough-on-Tees, Yorkshire. Improvements in the manufacture of sulphates of soda and potash, and in calcining carbonates of soda and potash. Dated May 21, 1875.
1869. N. Thompson, of Brooklyn, near New York, U.S. Improvements in stoppers for bottles, jars, and other hollow articles. Dated May 21, 1875.
1890. W. B. Lake, of London. Improvements in feeding bottles. Dated May 24, 1875.
1900. H. Deacon, of Widnes, Lancaster. Improvements in the manufacture of chlorine. Dated May 25, 1875.
2006. M. Gill, of Huddersfield, Yorkshire. A new stoppered bottle. Dated June 2, 1875.
- Letters Patent have been issued for the following:—
746. J. White, of Fleet Street. Improvements in the manufacture of chromates of potash and soda and their bichromates. Dated March 1, 1875.
758. C. Tallis and E. Cave, both of St. Helier, Jersey. Improvements in bottles for containing aërated or other liquids, and in closing or stopping the same and extracting the liquids therefrom, and in machinery or apparatus for filling such bottles. Dated March 3, 1875.
1323. H. Gaskell the Younger, of Wigan, Lancaster. Improvements in the manufacture of alkali. Dated April 12, 1875.
1455. P. Spence, of Newton Heath, Manchester. Improvements in the manufacture of manure from certain mineral phosphates. Dated April 21, 1875.
1502. J. Brock, of Wigan, Lancaster. Improvements in the manufacture of perforated blocks of chloride or sodium of potassium for use in the manufacture of sulphate of soda and sulphate of potash. Dated April 23, 1875.

Specifications published during the month:—

Postage 1d. each extra.
1874.

3358. F. B. Mitchell. Stoppers for bottles. 8d.
3546. H. B. Fox. Stoppers for bottles. 10d.
3575. P. J. Lantley. Stoppers for bottles. 8d.
3595. E. Bredt. Stopping bottles. 8d.
3815. J. Edwards. Bottles for aërated liquids. 8d.
3855. W. Froggatt and another. Stoppers for aërated water bottles. 6d.
1875.
484. G. Haseltine. Filling and corking bottles. 8d.



BANKRUPT.

ALLEN, HENRY FRANCIS, Cloughjordan, Tipperary, apothecary and draper.

LIQUIDATIONS.

(By arrangement or composition.)

Notices of first meetings have been issued *in re* the following estates. The dates are those of the petitions:—

- BRAY, JOHN, High Street, Sheerness, chemist. June 11.
- CORRIET, WILLIAM, Rubicon Ironworks, Bradford, manufacturing chemist. June 25.
- COOK, WILLIAM, trading as William Cook, Jun. & Co., Quayside, Newcastle, chemical broker and merchant. June 7.
- CRISP, NATHANIEL, Elm Lodge, Swallowfield, Berks, surgeon. June 15.
- DALBY, ROBERT E., Dundas Street, Sunderland, chemist. June 10.
- GREAVES, GEORGE B., Ashborne, near Derby, chemist. June 30.
- HAMES, JOHN, Bontport Street, Barnstaple, chemist. June 8.
- HEATH, ALBERT, 11 Castle Street, Leicester Square, chemist. June 4.
- HURLEY, JOHN, 66 Wardour Street, Soho, surgeon. June 7.

DIVIDENDS DECLARED.

- BLANKLEY, WILLIAM H. (Bkt.), Gainsborough, chemist. 2nd and final div. 1s. 5d.; J. Craven, at Oldham & Iverson's, Gainsborough, solicitors.
- KENNER, GEORGE JOHNSON (Liq.), Newcastle, Gateshead, and Jarrow, alkali manufacturer. 3rd div. 1s. 10d., making a total of 16s. 6d. in the pound, July 5, between 10 and 2; Monkhouse, Goddard, Miller & Co., 3 St. Nicholas Buildings, Newcastle.
- LAWRENCE, GEORGE R. (Liq.), Towcester, Northamptonshire, surgeon. 1st and final div. 2d.; H. Walker, 10 St. Giles Street, Northampton.
- POLLEXFEN, EDWARD (Bkt.), Horncastle, chemist. 2nd and final div. 2d.; A. C. R. Adecock, Horncastle.

PARTNERSHIPS DISSOLVED.

- ALLEN & MASSINGHAM, Ripley, Derbyshire, surgeons. June 21. Debts by Josiah Allen.
- BULLIN & ALLINGHAM, 12 Whitefriars, Chester, surgeons and dentists. Apr. 20.
- COLTHURST & MOIR, Keynsham, Somerset, surgeons. June 24. Debts by Richard Colthurst.
- HAMMOND & NOTTINGHAM, 223 High Street, Shadwell, E., surgeons. May 8.
- HANDCOCK & SMITH, Hunslet, Leeds, surgeons. Apr. 24. Debts by Thomas Smith.
- HARDING & SPROSTON, Bordesley Chemical Works, Milk Street, Birmingham, manufacturing chemists. May 27.
- MORRIS & REID, Barking Road and Victoria Dock Road. Apr. 30. Debts by Ellis Jones Morris.
- NOBLE BROS., Aintree, near Eiland, chemical manufacturers. May 12.
- RICHARDS, HENRY & SON, Pontardulais, Glamorganshire, chemical manufacturers. June 5. Debts by Henry Richards.



TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

Some 11s. Clarke's Blood Mixture for 7s. 6d. each. 20/84.

Printing press, prints 9 by 6; 10s. 6d.; Tully, Rotherfield.

A quantity of good old bells; cheap. Yorath, Canton, Cardiff.

"Pharmaceutical Journal," posted Monday night. Offers wanted C. Jenner, Bury St. Edmunds.

10,000 fly papers (Jaques'), 14s. 1,000. Carriage paid; specimen forwarded. Fortune, Chemist, Anstruther.

Canary seed, in exchange for anything acceptable. Ford, Chemist, Pontypool.

"The Lancet," uncut, from Saturday until Thursday; half price. Medicus, Newferry, Cheshire.

Fresh hyoscyamus niger; good exchange. Higginson, Newferry, Cheshire.

Two Hooper's water-beds, perfect condition, unused, but slightly soiled. Coldwell, Chemist, Queen's Road, Peckham.

9 dozen shilling boxes French floating lights, carriage free for 20s. Goosey & Rogers, Chemists, Stepney, London.

13 dozen Britannia metal round boxes, size $1\frac{1}{2} \times \frac{3}{4}$ deep. Cash or exchange. Morton, 216 Rockingham Street, Sheffield.

Kelly's Directory, six home counties, 1874. Nine dozen Walkden's penny ink. What offers? Tully, Chemist, Rotherfield, Sussex.

"Selecta 5 Prescriptis," 3s. 6d., "Cæsar Translated," 1s. 9d., or exchanged for forceps or theological works. 4 Broadway, Turnham Green, W.

Quite new, Figgott's (Argyle Street) patent galvanic battery, continuous current; cost, with directions, 6l. price 3l. 16s. A. Deck, chemist, Cambridge.

First-class dental lathe for immediate disposal; iron standards, &c. Any reasonable offer will be accepted. Alpha, Fore Street, Rotherfield.

Statham's 5l. 5s. economic laboratory, scarcely used, refilled with fresh chemicals, suitable for the Minor and Major Examinations, 75s. cash; Smith's "Guide to the Minor," new, 5s. Roberts, 69 High Street, Margate.

Steam still, worm tub, stand, &c.; also 13 black glass wide-mouth store bottles, painted gold labels, hold 7 quarts each; 9 ditto hold 5 quarts each, and a large powerful galvanic battery. Wilkinson & Co., Baker's Hill, Sheffield.

Dr. Roberts' anti-scorfulous pills, 1s. 1½d., and Mather's heart plasters, 6d. (clean), Red. Chirarte, Pulv. Antim. Nig., Pulv. Antim. Tart. Calvert's Pig Powders. What offers, or exchange. Kay, Chemist, Stainland, Halifax.

Splendid $\frac{1}{4}$ -plate lens, with camera and stand complete, 3l., cost 5l. 10s.; excellent $\frac{1}{4}$ -plate lens, with camera, price 1l. 7s. 6d. Both very cheap. Anthony's "Cæsar," 2s. Appleton, Attercliffe.

Royle's "Materia Medica," new, 8s. 6d.; Bowman's "Medical Chemistry," 2s. 6d.; Fowne's "Chemistry," 5s.; Griffin's "Chemical Recreations," 4s. 6d.; Oliver's "Botany," new 3s. 3d. H. Varney, 71 High Street, Oxford.

Attfield's "Chemistry," Bentley's "Botany" (last editions), Evan's "Materia Medica Cabinet," equal to new. What offers? A. Hanington, 135 Ladbroke Grove, Notting Hill.

A bargain. 2 vols. "Chemical Technology, or Chemistry in its Application to the Arts and Manufactures containing the Acids, Alkalies, and their Salts"—numerous illustrations. Published by H. Baillière at 3l. 9s.; will take 30s., or highest reasonable offer. M. Collins, 80 Lumb Lane, Bradford.

6-feet dispensing screen in three compartments, with shifting shelves and glass tablet on top, blue ground and gold letters, 5s. 22-feet bent-glass case, similar to 43 Maw's catalogue, with the glass at back cracked, 50s. Hand-mirror stand 1 to 15, silvered glass sides and front, 9s. H. A. Wellington, Freshwater, I.W.

Barlow's "Medicine," 3s.; Barber's "Pharmacopœia and Medical Botanical Map," 5s.; Garrod's "Materia Medica," 3s.; 8 (Clendon's pattern) tooth forceps, in morocco pouch, 18s. 6d.; specific gravity bottle, with perforated stopper, counterpoise, in japanned case, 4s. 6d. Appleton, Attercliffe.

Two microscopes; one by Baker, London; 3 powers. One $\frac{1}{4}$ -inch, a first-class instrument, cost 9 guineas. Price, 3l. 5s.; and one pharmacy instrument with 3 powers, condenser, live box, and forceps, in mahogany case. Cost 6 guineas; price, 3l. 10s.; or exchange for saleable patents. J. A., 278 Great Homer Street, Liverpool.

Shop jars, ten $\frac{1}{4}$ -lb., white; twelve 1-lb., six 3-lb., blue; two enemas, No. 22, Maw's; veterinary enema; marble mortar, 17 inches diameter, pestle, stand; several parts and sets of artificial teeth, hanging case for same; Squire's "Companion Pharmacopœia"; Beasley's "Pocket Formulary"; Druggist Receipt Book; Fergusson's "Practical Surgery"; Hooper's "Physician's Vade Mecum"; Fowne's "Chemistry," Offers. "Eia," Post Office, Gipsy Hill, London.

Carriage Paid. Chemistry.—Gregory's "Outlines," published 12s., 3s. 6d.; Bowman's "Practical," 6s. 6d., 2s. 6d.; Stockhardt's "Experimental," 2s. 6d.; Wittstein's "Pharmaceutical," 1s. 6d.; Sneath's "Inorganic for Beginners," 8d.; "Year Book of Pharmacy," 1870, 1871, 1872, 1874; Arnold's "Latin Prose Composition," 2s. 8d. All in good condition. John O. Littlewood, Sutton-in-Ashfield, Nottinghamshire.

Large stock drugs, patents, sundries of a Co-operative Company; 3,000 gold-labelled shop bottles, all sizes; 1,000 gold-labelled shop jars—blue, white, drab, lilac, olive—all sizes; 150 composition, marble, glass, iron mortars and pestles; 2 gross graduated wine glasses; one 2 feet 7 inches long, 17 inches wide, 8 inches high mahogany bent glass show case, mirror back, 30s.; one 3 feet long ditto, 40s.; one Mason tooth-brush show case, fig. 48; brass lacquered window fittings, silvered plate glass. Lloyd Rayner, 333 Kingsland Road, London, N.

Show-jar, good condition, Maw's figure 19; 24 inches high, 50s.; Leech aquarium, 14 inches diameter, with syphon-filling apparatus and net; Fitch & Nottingham's make, 10s. 6d.; Sykes' hydrometer; gilt, with book; perfect; what offers? Lockwood, Chemist, Sheffield.

Six 3-gall. carboys, 5s. each; 4 4-gall. do., 10s. each; 6 6-gall. do., 12s. each; 2 10-gall. do., 20s. each; 10 1½-gall. black bottles, capped, 1s. 6d. each; 10 doz. stoppered bottles, various, 6s. doz.; 1 pair spec. jars, royal coat of arms, 4d.; 1 pair do., blue band, 11s.; 1 superior Price of Wales' feathers, glass good top, 30 inches high, 70s.; 1 doz. 1-lb. stone jars, japanned caps, 7s.; 2 doz. 1-lb. do., 4s.; 2 plate-glass counter cases, as Maw's No. 103, 5 feet long, 5½ ft. 5s.; sponge case, as Maw's No. 93, 70s.; 3 plate-glass tooth brush cases, 30s.; 1 3-foot bent-glass counter case, velvet lined looking-glass back, 30s.; marble-top soda-water stand, 40s.; 3 flat plate-glass counter cases, 12s.; 1 upright case for front of desk, 35s.; 1 upright do., 3 feet long, 45s.; globe lamp and bracket, 80s.; a 12 5-grain pill machine, 9s.; 10 feet 6 inches by 15 inches plate-glass fascia, 50s.; several squares of silvered plate glass, 42 inches by 26 inches, 25s. each. E. Natus, 23 Colveston Crescent, Ridley Road, Kingsland.

Handsome mahogany ebonised plate glass sponge case in two compartments, 4 feet long, 20 inches wide, 20 inches high; handsome mahogany plate glass dispensing screen as trebles 136, 6 feet 4 long; handsome mahogany wall fitting, 13 feet long, similar to trebles No. 90; 9 feet long nest mahogany gold labelled shop drawers with lockers, and mahogany-faced shelving and cornice above; one 7 feet 4 long nest 65 mahogany shop drawers; one 3 feet 2 long, one 2 feet 11 long, one 2 feet 4 long nests mahogany shop drawers with lockers under; one 2 feet 4 long nest shop drawers; handsome mahogany wall case, 9 feet long, 4½ feet high; handsome mahogany wall case 16 feet long, with a return end 1 foot 6 long, 4 feet 8 inches high; handsome 4 feet 4 long 8 feet 8 inches high mahogany plate-glass wall case, in two compartments in the height; handsome 4 feet 2 long, 4 feet 9 high mahogany plate-glass wall case in two compartments in the height; handsome silvered plate-glass shop door; handsome ebonised plate-glass shop door; handsome soda water stands as Maw's figs. 62 and 63; handsome mahogany show case and desk as Maw's fig. 39; one 3 feet 9 long, 12 inches wide mahogany plate-glass show case, trebles No. 106; three mahogany desks; three 4-gallon pear-shape carboys with stands; four 2-gallon pear-shape carboys; twelve 6 and 8-gallon carboys with stands; handsome spec. jar, royal arms, 27 inches high, with stand; two handsome spec. jars with stands, 30 inches high. Lloyd Rayner, 333 Kingland Road, London, N.

WANTED.

Wanted, ½ dozen flat globes for the window. 19/84.

THE CHEMIST AND DRUGGIST, or "Pharmaceutical Journal," two days old. B. A., 113 St. Martin's Lane, W.C.

A two-grain pill machine; state lowest price. Address 81 Shudehill, Manchester.

Top for spec. jar-glass, gilt inside, diameter at bottom 8 inches, top 12 inches. Andrews, Penbroke Dock.

A cheap second-hand dental chair, with head-rest, and part mechanical movements. State price and particulars. Potts, dentist, Seaham.

Wanted, quantity wide and narrow-mouth shop bottles; also ointment jars and two large show carboys. Sheldrake, Keighley.

"Pharmaceutical Journal" from July, 1870, to present date, inclusive. Half-price offered. Address, B. S., 14 Bath Street, Newgate Street, E.C.

Pereira's "Materia Medica," 3 vols., latest; Ure's "Arts Dictionary;" Richardson's "Mechanical Dentistry." State price, edition, condition. "Eta," Post Office, Gipsy Hill, London.

Two doz. 16 and 30-oz. narrow and wide-mouth stoppered shop bottles; gross each 1, 2, 4, and 8-oz. common dispensing bottles; 2 2-gallon show carboys, 1 show jar, 2 8-oz. graduated measures, 10 gross assorted dispensing carboys, CHEMIST AND DRUGGIST, few days old; "British Pharmacopoeia," Cooper's "Dictionary of Practical Surgery," Maynes' "Medical Vocabulary," Dobell's "Practitioners' and Student's Guide," Bryant's "Practice of Surgery," Barlow's "Practice of Medicine," latest editions. State price, condition, &c. James Morgan, Chemist, Cayo, Carmarthen-shire.

Trade Memoranda.

MAGISTERIAL office has been conferred on Mr. Joseph Hick, pharmaceutical chemist, of Bradford.

MESSRS. TIDMAN & SON, of Wilson Street, Finsbury, have just issued a new catalogue of patent medicines and miscellaneous articles, which is remarkably complete and useful to a retail chemist.

WE HEARD the other day that Mr. J. Hall Roberts, formerly a chemist at 21 The Drapery, Northampton, and who, nine years ago, had to satisfy his creditors with 6s. 8d. in the pound, has been able, within the past month, to gratify them with the remaining 13s. 4d. Mr. Roberts is at present travelling in the North for a well-known London house.

A BOLD STROKE of advertising was executed by Mr. F. J. Clarke, of Lincoln, a few weeks ago, by taking, almost simultaneously, a whole page in our three great daily papers, the *Telegraph*, *Standard*, and *Daily News*, to announce the virtues of the famed blood mixture. We have no remembrance of any similar feat on the part of a patent medicine proprietor in England.

A NEW "Descriptive Catalogue of Soda Water Machinery and Accessories" has just been published by Messrs. Barnett, Son & Foster (price one shilling). It gives drawings and well written descriptions of the machinery and the various adjuncts connected with the soda water trade, and anyone desiring to gather information respecting this important branch of a chemist's trade previous to embarking in it will find this book very useful. At the end of the book are printed in small type some twenty pages of testimonials from purchasers of Messrs. Barnett's machines in Great Britain, which are a somewhat remarkable collection.

We have received the following samples:—

RUTTER'S OSTRUTHIUM, a liquid identifice of emulsive consistence, leaving a very pleasant flavour in the mouth and odour to the breath. This article is neatly put up in shilling bottles. It is made by Mr. Rutter, of Cambridge.

FULLER'S Phosphorynised Cod Liver Oil and Glycerine Emulsion, a preparation of cod liver oil as pleasant as that medicine can be made, and combining with it the virtues of the phosphates. From Messrs. Fuller & Co., Norwich.

FROM MESSRS. MACKAY & CO., of Glasgow, samples of their "Rainbow Aniline Dyes," which are sold in crystalline form, in sixpenny and shilling boxes. A small chart showing what coloured materials can be dyed by either of the anilines is a new feature supplied by this firm.

A SPECIMEN of genuine mustard flour as supplied by Smithdale, of Norwich. This is guaranteed to be the pure flour of the finest mustard seed. Under the present difficulties in respect to the sale of doubtful mustards this one would be worth the attention of dealers. The same firm supply a "mustard bran" for babs, especially suitable for chemists' sale.



AMID the general dulness of trade we may certainly take to ourselves the somewhat negative consolation that things are at all events not so bad as they might be. Since the large stoppage of J. C. in Thurn & Co., mercantile failures, amounting to nominally over 21,000,000*l.*, have occurred, with but little disturbance to trade generally or even to the trades immediately concerned, outside the circles directly affected. The Board of Trade returns show a total value of exports in June amounting to 18,336,192*l.*, against 19,367,613*l.* in June of 1874. The quantity of chemicals exported from Great Britain is not less than last year, taking them all round, but it seems evident that they are being sold at such prices as can afford no profit to the producers, but which it seems impossible for manufacturers to escape from. This refers more especially to the heavy chemicals, alkalies, and such products. In reference to this, one firm of manufacturers remarks:—"Possibly the producers may at last tire of meeting with disappointment after disappointment, and resolve upon slightly relaxing their ruinous energy; so far it must be owned no sign of any such wisdom can be detected, and it is to be feared that the trade will have to undergo still more suffering ere it can recover. To mention only one instance of the many results of the present stocks, saltcake can now be bought as cheap as, if indeed not a trifle cheaper than, it was before the very first advance in fuel; while soda ash and bleaching powder are not many removes from the same level, which no doubt they will soon overtake." White caustic barely maintains its low value, which has further receded in cream. Aluminous cake is abundant and lower. The demand for sulphate of ammonia has suffered a fresh falling off, and the price is somewhat weaker. In nitrate of soda, some moderate lots have been transferred at current rates; an early improvement, however, is thought improbable, the demand for fertilising purposes having now entirely ceased.

We quote the following in respect to quicksilver from the "Philadelphia Drug Exchange Circular," a most reliable authority:—"Price in California from 65 to 70 cents gold. This is below the present rates for Spanish in the London market. May 8, 1875, the quotation in London was 12*l.*, against 19*l.* 15*s.* same time 1874. Stocks in London are considerable, say 22,000 to 23,000 bottles, and a further reduction in price there may be anticipated. Here the market is almost bare of stock at present, and the price has advanced—nominal prices 80 to 82½ cents gold per pound in flasks. The low rates in California have brought liberal orders on China account. Some of the small mines have stopped, as they cannot produce at present figures, and the large mine owners and agents are sanguine of higher prices before many weeks. The silver mines are likely to use the article much more freely now than during the winter. 65 cents in California, it would seem, has been considered a safe price, as we understand contracts have been made on this basis for forward delivery. We consider any material advance as extremely doubtful. Stocks are large in London, and the price still above the average. The recent rapid rise from 10*l.* to 26*l.*, and the unexpected fall from 26*l.* to 12*l.* within a short period, have demonstrated the risk that large dealers and manufacturers run in handling this article, and it is to be hoped that quotations will be less subject, in future, to speculative fluctuations."

Good steady business has been effected in drugs both publicly and privately. China rhubarb, Tinnevely senna, Cape

aloes, myrrh, and musk (of which the supply has been large), have brought full to rather dearer rates; while gum ammonia cum and citronelle oil have favoured buyers.

Turkey opium has exhibited unmistakable signs of weakness in the market, and apparently with sufficient reason, for the reports from Smyrna seem almost unanimous in anticipating an abundant supply for the new season. The price obtained during the past year has been probably higher than the intrinsic value, and the present fall is no doubt attributable to the desire of speculators to realise before a worse thing befall them in the shape of the new crop. This is reported in every quarter to be exceedingly abundant this year, and none estimate the out-turn as below the average. This, if coincident, as we imagine, with a somewhat large stock of surplus, will so reduce prices in the forthcoming season as to ensure very high ones for the year following—because the crop raised will certainly be very deficient if growers find it unprofitable. If the market should take this course, and we advise our readers to watch it, there will be no safer investment during the ensuing winter than a stock of Turkey opium.

Jaborandi leaves are now staples at the drug sales, but are not yet much cared for by purchasers. At last sales 50 lbs. stalky (none the worse for that, probably) were bought in at 20*s.* per pound. This price contrasts to the advantage of English druggists with that quoted in a recent New York drug report, which says that "a small lot of jaborandi leaves has been received, and sold at 1½ dollars (currency) per ounce."

We quote the following items of information from a letter we have received from Messrs. Cavallier Frères, of Grasse:—"In consequence of the dry weather, which has now lasted for some months, our crop of violets, the gathering of which was concluded at the end of April, has been no more than an average one; but, notwithstanding that, business is so dull that the market value of these flowers is only about two-thirds the usual price." Oils have not shown any activity during the past month. Olive has scarcely been talked about. The Tunisian Government has reduced the duty on Tunis olive oil from 16½ piastres (7*s.* 9*d.*) to 10 piastres (4*s.* 8*d.*) per cwt., as a provisional measure for one year. Turpentine has shown signs of becoming a little firmer, higher prices for sales in advance being now required.

Pepper: Both black and white have been pressed for sale, and prices are now lower than for several years. Chillies have also further given way. Ginger is lower, but nutmegs dearer.

SOUTH LONDON SCHOOL OF PHARMACY.—On the 12th inst., being the closing day of lectures for the Summer Session at the above Institution, the students of the pharmacy class assembled to present Dr. Muter with a handsome and richly-chased silver inkstand, bearing a suitable inscription, in token of his untiring energy in promoting their education. Some time ago the lecturer on pharmacy and materia medica died, and his place had been filled temporarily. This latter gentleman having been unwell for some weeks, Dr. Muter immediately offered to lecture on the whole subjects taught at the School, and has carried out this arduous task; so that there was some extra reason for the students to mark their recognition of Dr. Muter's zeal and ability as a teacher. We see from our "Wanted" column that the management are now about to decide the election of another permanent lecturer on materia medica and pharmacy, whilst Dr. Muter will retain as heretofore his own subjects of chemistry and botany. This is not the first testimonial by many that Dr. Muter has received.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining Law for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.		1875.		1874.	
ACIDS—		<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Acetic	per lb.	0 4	to 0 4 1/2	0 4	to 0 4
Citric	"	3 7	0 0	4 3	0 4
Hydrochloric	per cwt.	5 0	7 0	4 0	7 0
Nitric	per lb.	0 5	0 5 1/2	0 5	0 5 1/2
Oxalic	"	0 6	0 6 1/2	0 6 1/2	0 6 1/2
Sulphuric	"	0 0 1/2	0 1 0 1/2	0 0 1/2	0 1 0 1/2
Tartaric crystal	"	1 6 1/2	1 6 1/2	1 7 1/2	0 0
powdered	"	1 6 1/2	0 0	1 7 1/2	0 0
ANTIMONY ore	per ton	200 0	200 0	240 0	0 0
crude	per cwt.	40 0	0 0	0 0	0 0
regulus	"	0 0	0 0	0 0	0 0
star	"	0 0	0 0	0 0	0 0
ARSENIC lump	"	0 0	0 0	47 6	48 0
powder	"	14 3	14 9	10 0	0 0
BRIMSTONE, rough	per ton	150 0	0 0	127 6	145 0
roll	per cwt.	10 0	11 0	9 9	0 0
BOUR	"	0 0	0 0	11 6	12 6
IODINE, dry	per oz.	0 8	0 0	0 10 1/2	0 11
IVORY BLACK, dry	per cwt.	8 6	0 0	8 6	0 0
MAGNESIA, calcined	per lb.	6 6	0 0	1 1	0 0
MERCURY	per bottle	220 0	0 0	395 0	0 0
MINIUM, red	per cwt.	24 6	25 0	25 0	25 3
orange	"	37 0	0 0	37 0	0 0
PRECIPITATE, per lb.	"	4 7	0 0	6 1	0 0
white	"	4 7	0 0	6 1	0 0
PRUSSIAN BLUE	"	0 0	0 0	0 0	0 0
SALTS—					
Alum	per ton	155 0	160 0	170 0	180 0
powder	"	170 0	0 0	190 0	0 0
Ammonia	per lb.	0 7	0 7 1/2	0 7	0 0
Carbonate	"	0 0	0 0	0 0	0 0
Hydrochlorate, crude, white	per ton	680 0	0 0	650 0	0 0
British (see Sal. Am.)	"	0 0	0 0	0 0	0 0
Sulphate	per cwt.	380 0	370 0	335 0	345 0
Argol, Cape	per cwt.	80 0	95 0	87 6	97 6
Red	"	80 0	93 0	76 0	82 6
Opote, red	"	24 0	36 0	28 0	32 0
Sicily	"	60 0	62 6	52 6	57 6
Ashes (see Potash and Soda)					
Bleaching powd., per cwt.	"	9 0	9 3	11 9	12 0
Borax, crude	"	40 0	60 0	45 0	70 0
British refined	"	36 0	0 0	70 0	0 0
Calomel	per lb.	4 2	0 0	5 9	0 0
Copper					
Sulphate	per cwt.	26 6	26 9	26 0	27 0
Coppers, green	per ton	65 0	70 0	65 0	70 0
Corrosive Sublimite p. lb.	"	3 6	0 0	5 0	0 0
Cr. Tartar, French, p. cwt.	"	112 6	0 0	112 0	0 0
brown	"	92 6	98 0	95 0	100 0
Epsom Salts	per cwt.	6 6	0 0	5 0	6 3
Glauber Salts	"	6 6	0 0	4 6	5 6
Lime					
Acetate, white, per cwt.	"	11 0	20 0	14 6	21 0
Magnesia: Carbonate	"	42 6	45 0	42 6	45 0
Potash					
Bichromate	per lb.	0 6 1/2	0 0	0 6 1/2	0 0
Carbonate					
Potash, Canada, 1st sort	per cwt.	28 6	29 0	35 0	35 6
Pearlshale, Canada, 1st sort	per cwt.	39 0	0 0	0 0	0 0
Chlorate	per lb.	0 9 1/2	0 0	0 10 1/2	0 11
Prussiate	"	1 1 1/2	0 0	1 1 1/2	0 0
red	"	3 2	3 3	4 10	2 11
Thurstone (see Argol and Cream of Tartar)					
Potassium					
Chloride	per cwt.	7 0	0 0	7 0	0 0
Iodide	per lb.	10 0	10 6	12 6	0 0
Quinine					
Sulphate, British, in bottles	per oz.	7 0	0 0	8 0	0 0
Sulphate, French	"	6 7	0 0	7 9	0 0
Salt Acetos	per lb.	0 9	0 10	0 10 1/2	0 0
Salt Ammonium, Brit. cwt.	"	44 0	45 0	44 0	45 0
Saltpetre					
Bengal, 5 per cent. or under	per cwt.	18 0	18 9	20 6	22 0
Bengal, over 5 per cent.	"				
British, refined	per cwt.	17 0	17 6	18 6	30 0
Soda: Bicarbonate, p. cwt.	"	23 9	25 0	26 9	27 6
Carbonate	"	13 3	13 6	15 9	0 0
Soda Ash	per deg.	0 2 1/2	0 0	0 2 1/2	0 0
Soda Crystals, per ton	"	105 0	0 0	112 6	0 0
Hypophosphite, per cwt.	"	0 0	0 0	0 0	0 0
Nitrate	per cwt.	11 3	11 9	11 3	11 9
SUGAR OF LEAD, White cwt.	"	44 0	0 0	47 0	48 0
SUGAR OF LEAD, Brown, cwt.	"	32 0	0 0	32 6	33 0
SULPHUR (see Brimstone)					

		1875.		1874.	
VERMILION		<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
VERMILION, English	per lb.	1 1	to 1 5	1 1 1/2	to 1 6
China	"	2 6	3 8	5 6	0 0
0 0	0 0	0 0	0 0	5 6	0 0
DRUGS					
Albans, Hepatic	per cwt.	60 0	180 0	80 0	200 0
Scolerine	"	80 0	205 0	102 6	240 0
Cape, good	"	34 0	37 6	38 0	40 0
Superior	"	23 0	32 0	30 0	37 0
Barbados	"	10 0	120 0	65 0	190 0
AMBERGROS, grey	oz.	53 0	75 0	0 0	0 0
BALSAM—					
Canada	per lb.	1 9	0 0	2 3	0 0
Capivi	"	2 0	0 0	2 8	2 9
Peru	"	6 0	6 3	8 0	8 1
Tolu	"	5 0	0 0	2 9	3 0
BAIKS—					
Canella alba	per cwt.	16 0	27 0	12 0	24 0
Cassia	"	19 0	22 6	22 0	20 0
Peru, crown & grey per lb.	"	0 10	2 6	0 10	2 7
Calisaya, fist	"	2 0	5 4	2 10	4 2
Croton quill	"	2 0	5 4	2 8	4 2
Cassia	"	0 6	1 2	0 6	1 2
E. I.	"	1 0	5 0	0 7	5 0
Platy	"	0 4	1 9	0 6	2 0
Red	"	1 6	4 9	1 0	2 0
Buchu Leaves	"	0 2	1 1	0 2	1 0
CAMPHOR, China	per cwt.	67 6	75 0	72 6	75 0
Japan	"	0 0	0 0	72 6	0 0
Red	"	1 0	1 6	1 0	1 0
Belin, Eng. per lb.	"	3 0	5 3	2 3	5 0
CANTHARIDES	"	3 0	5 3	2 3	5 0
CHAMOMILE FLOWERS, p. cwt.	"	35 0	63 0	50 0	84 0
CASABOR	"	10 0	10 6	4 0	20 0
DRAGON'S BLOOD, B. p. cwt.	"	80 0	220 0	100 0	250 0
FRUITS AND SEEDS (see also Seeds and Spices).					
Anise, China Star per cwt.	"	110 0	112 6	110 0	115 0
Spanish, &c.	"	30 0	35 0	12 0	27 0
Beans, Congo	per lb.	1 8	3 0	1 6	2 4
Cardamoms, Malabar good	"	3 6	5 3	4 0	4 8
inferior	"	2 6	3 0	2 0	3 9
Madras	"	2 6	3 0	2 0	3 6
Ceylon	"	5 8	5 10	4 0	4 10
Casta Fistula	per cwt.	12 6	15 0	12 0	18 0
Caster Seeds	"	20 6	25 0	24 0	28 0
Cocculus Indicus	"	14 0	15 0	15 0	17 0
Colocynth, apoc.	per lb.	0 11	1 0	0 4	0 10
Croton Seeds	per cwt.	41 0	0 0	43 0	53 0
Cubeb	"	20 6	25 0	24 0	28 0
Cumin	"	15 0	20 0	15 0	22 0
Dividivi	"	11 0	17 0	11 0	15 0
Fenugreek	"	22 0	16 0	28 0	16 0
Guinea Grains	"	22 0	0 0	21 0	0 0
Juniper Berries	"	9 0	10 6	9 0	10 6
Nux Vomica	"	8 9	15 0	9 0	15 0
Tamarindia, East India	"	14 0	18 0	10 0	12 0
West India	"	16 0	22 0	18 0	28 0
Vanilla, large	per lb.	60 0	70 0	68 0	86 0
inferior	"	50 0	59 0	45 0	67 0
Wormseed	"	0 0	0 0	38 0	48 0
GINGER, Preserved, per lb.	"	0 6	0 7	0 7	0 9
HONEY, Chili	per cwt.	31 0	45 0	32 0	46 0
inferior	"	40 0	47 0	32 0	44 0
Australian	"	0 0	0 0	38 0	48 0
IPERACANTHIA	per lb.	4 2	4 4	3 3	3 6
ISINGLASS, Brazil	"	3 0	5 0	3 4	5 0
East India	"	2 0	5 10	3 6	5 0
West India	"	4 8	5 2	4 2	4 11
Russ. long staple	"	18 0	16 0	8 6	12 6
inferior	"	0 0	0 0	0 0	0 0
Simovia	"	3 0	4 0	3 6	5 0
JALAP, good	"	0 7	0 0	0 8	0 0
inferior & stems	"	0 0	0 8 1/2	0 10	0 11
LEMNUS JUICE	per degree	1 0	2 8	2 4	0 0
LIME JUICE	per gall.	1 6	2 0	2 4	2 6
LICORICE, Spanish per cwt.	"	55 0	97 0	40 0	70 0
Liquorice Root	"	20 0	31 0	11 0	16 0
MANKA, flaky	per lb.	4 6	5 6	2 6	3 0
small	"	1 6	1 9	1 2	1 5
MUSK, Pod	per oz.	15 6	47 0	20 0	43 0
Grain	"	42 0	56 0	45 0	55 0
OILS (see also separate list)					
Almond, expressed per lb.	"	1 1	0 0	0 11	0 0
Castor, 1st pale	"	0 5	0 0	0 0	0 0
second	"	0 3 1/2	0 4 1/2	0 4 1/2	0 5
infer. & dark	"	0 3 1/2	0 4 1/2	0 4 1/2	0 5
Cod Liver	per gall.	3 6	6 0	3 10	6 2
Croton	per oz.	0 2 1/2	0 0	0 3	0 4
Essential Oils					
Almond	per lb.	23 0	30 0	25 0	36 0
Anise-seed	"	10 6	9 6	8 3	8 6
Bay	per cwt.	0 0	0 0	65 0	70 0
Bergamot	per lb.	10 4	24 0	10 4	24 0
Cajeput	per bottle	2 6	2 10	2 3	2 5
Caraway	per lb.	9 0	0 0	5 3	6 0
Cassia	"	4 0	4 5	4 6	4 9
Cinnamon	per oz.	0 2	0 0	0 2	0 0
Cinnamon-leaf	"	0 2	0 3	0 2 1/2	0 0
Citronelle	"	0 1 1/2	0 0	0 1 1/2	0 0
Clove	per lb.	10 0	0 0	9 0	0 0
Juniper	"	1 10	2 6	1 4	2 4
Lavender	per lb.	2 0	5 6	1 10	5 0
Lemon	"	7 0	11 0	7 0	14 0

1875.				1874.			
	<i>z. d.</i>	<i>z. d.</i>	<i>z. d.</i>		<i>z. d.</i>	<i>z. d.</i>	<i>z. d.</i>
Essential Oils, continued—							
Neroli	0 23	0 0	0 23	0 0	0 0	0 0	0 0
Nutmeg	0 6	0 7	0 7	0 8	0 0	0 0	0 0
Orange	13 0	23 0	15 0	22 0	0 0	0 0	0 0
Oil of Rose	2 9	4 0	3 6	4 0	0 0	0 0	0 0
Patchouli	2 9	4 0	3 6	4 0	0 0	0 0	0 0
Peppermint :							
American	21 6	0 0	20 6	21 6	0 0	0 0	0 0
English	35 0	36 0	29 0	32 0	0 0	0 0	0 0
Rosemary	1 4	1 10	1 4	1 10	0 0	0 0	0 0
Sassafras	12 0	19 0	6 0	18 0	0 0	0 0	0 0
Sassafras	1 9	2 0	1 9	2 0	0 0	0 0	0 0
Thyme	0 7 1/2	0 10	0 3	0 24	0 0	0 0	0 0
Mace, expressed	20 0	35 0	32 0	35 0	0 0	0 0	0 0
Opium, Turkey	22 0	35 0	14 0	29 0	0 0	0 0	0 0
inferior	160 0	315 0	70 0	85 0	0 0	0 0	0 0
QUASSIA (bitter wood) per lb.	2 0	4 6	2 9	5 0	0 0	0 0	0 0
RUBIAR, China, good and fine	0 8	1 10	0 8	2 7	0 0	0 0	0 0
Good, mid. to ord.	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Dutch trimmed	0 0	0 0	0 0	0 0	0 0	0 0	0 0
RUSSIAN	0 0	0 0	0 0	0 0	0 0	0 0	0 0
ROOTS—Columba	20 0	30 0	8 0	18 0	0 0	0 0	0 0
China	18 0	20 0	18 0	24 0	0 0	0 0	0 0
Galangal	23 0	24 0	17 0	20 0	0 0	0 0	0 0
Gentian	30 0	33 0	30 0	33 0	0 0	0 0	0 0
Hellebore	26 0	75 0	30 0	70 0	0 0	0 0	0 0
Orris	30 0	33 0	30 0	33 0	0 0	0 0	0 0
Pellitory	0 10	1 3	0 1	1 3	0 0	0 0	0 0
Pink	0 4	2 0	0 5	0 11	0 0	0 0	0 0
Rhatany	2 10	3 0	1 4	1 9	0 0	0 0	0 0
Sassa	18 0	23 0	22 0	26 0	0 0	0 0	0 0
Saffron, Spanish	0 0	0 0	170 0	200 0	0 0	0 0	0 0
SALP	0 0	0 0	1 0	1 3	0 0	0 0	0 0
SARAPARILLA, Lin.	1 3	2 0	1 3	1 7	0 0	0 0	0 0
Para	0 0	0 0	13 0	15 0	0 0	0 0	0 0
Honduras	0 0	0 0	25 0	30 0	0 0	0 0	0 0
Jamaica	7 0	24 0	8 0	24 0	0 0	0 0	0 0
SASSAPARILLA	0 1	0 8	0 1	0 8	0 0	0 0	0 0
SCAMON, Virgin	0 6	2 6	0 4	1 5	0 0	0 0	0 0
second & ordinary	0 1	0 8	0 1	0 8	0 0	0 0	0 0
SINNA	0 6	2 6	0 4	1 5	0 0	0 0	0 0
Alexandria	0 1	0 8	0 1	0 8	0 0	0 0	0 0
SINAPIS, refined	1 1	1 2	1 0	1 1	0 0	0 0	0 0
American	0 4	0 5	0 11	0 2	0 0	0 0	0 0
SQUILLS	2 10	3 0	3 10	4 0	0 0	0 0	0 0
GUMS	1 6	2 5	3 0	4 10	0 0	0 0	0 0
ADONIS drop	10 0	10 7 1/2	11 0	11 10	0 0	0 0	0 0
lump	5 10	10 0	6 0	10 10	0 0	0 0	0 0
ANI, fine washed	4 10	5 10	5 0	6 0	0 0	0 0	0 0
bold scraped	2 16	3 16	3 0	3 12	0 0	0 0	0 0
sorts	1 13	2 15	1 17	2 18	0 0	0 0	0 0
dark	7 0	11 0	7 10	11 0	0 0	0 0	0 0
ARABIC, R. L. fine	3 0	6 18	4 0	7 5	0 0	0 0	0 0
pale picked	1 10	2 15	1 15	2 15	0 0	0 0	0 0
srs. and tofin	3 1	4 1	1 0	1 10	0 0	0 0	0 0
garbings	1 10	1 15	1 6	2 3	0 0	0 0	0 0
TURKEY, picked to fin	1 5	1 10	1 5	1 16	0 0	0 0	0 0
second & inf.	0 12	2 4	0 14	2 8	0 0	0 0	0 0
in sorts	20 0	28 0	12 0	27 0	0 0	0 0	0 0
Galls	7 10	12 0	7 10	12 0	0 0	0 0	0 0
BARBARY, white	4 0	5 10	4 10	5 10	0 0	0 0	0 0
brown	5 10	6 10	5 10	6 10	0 0	0 0	0 0
AUSTRALIAN	4 0	5 10	3 15	5 15	0 0	0 0	0 0
ASSAFETIDA, com. to fin	0 15	1 1	0 4	0 10	0 0	0 0	0 0
BENJAMIN, 1st & 2nd	20 0	34 0	9 0	18 0	0 0	0 0	0 0
Sumatra 1st & 2nd	58 0	62 0	40 0	50 0	0 0	0 0	0 0
COPAL, Angola red	12 0	20 0	11 0	15 0	0 0	0 0	0 0
Benguela	10 0	20 0	11 0	15 0	0 0	0 0	0 0
Sierra Leone, per lb.	12 0	20 0	11 0	15 0	0 0	0 0	0 0
Manilla	10 0	20 0	11 0	15 0	0 0	0 0	0 0
DAMIAN, pale	10 0	20 0	11 0	15 0	0 0	0 0	0 0
Singapore	10 0	20 0	11 0	15 0	0 0	0 0	0 0
EUPHORBIA	10 0	20 0	11 0	15 0	0 0	0 0	0 0
GALBANUM	10 0	20 0	11 0	15 0	0 0	0 0	0 0
GAMBOR, picked, per lb.	10 0	20 0	11 0	15 0	0 0	0 0	0 0
GUAJAC	10 0	20 0	11 0	15 0	0 0	0 0	0 0
KINO	10 0	20 0	11 0	15 0	0 0	0 0	0 0
KOWRI, rough	10 0	20 0	11 0	15 0	0 0	0 0	0 0
scraped sorts	10 0	20 0	11 0	15 0	0 0	0 0	0 0
MASTIC, picked	10 0	20 0	11 0	15 0	0 0	0 0	0 0
MYRRH, gd. & fine per cwt.	10 0	20 0	11 0	15 0	0 0	0 0	0 0
ord. to fair	10 0	20 0	11 0	15 0	0 0	0 0	0 0
OLIBANUM, p. drop	10 0	20 0	11 0	15 0	0 0	0 0	0 0
amber & ylw.	10 0	20 0	11 0	15 0	0 0	0 0	0 0
garbings	10 0	20 0	11 0	15 0	0 0	0 0	0 0
SINERAL	10 0	20 0	11 0	15 0	0 0	0 0	0 0
SANDALOG	10 0	20 0	11 0	15 0	0 0	0 0	0 0
SHELLAC, Orange	10 0	20 0	11 0	15 0	0 0	0 0	0 0
Liver	10 0	20 0	11 0	15 0	0 0	0 0	0 0
THUS	10 0	20 0	11 0	15 0	0 0	0 0	0 0
TRAGACANT, leaf	10 0	20 0	11 0	15 0	0 0	0 0	0 0
in sorts	10 0	20 0	11 0	15 0	0 0	0 0	0 0
OILS	10 0	20 0	11 0	15 0	0 0	0 0	0 0
SEAL, pale	10 0	20 0	11 0	15 0	0 0	0 0	0 0
yellow to tinged	10 0	20 0	11 0	15 0	0 0	0 0	0 0
brown	10 0	20 0	11 0	15 0	0 0	0 0	0 0
SPERM	10 0	20 0	11 0	15 0	0 0	0 0	0 0
Cod	10 0	20 0	11 0	15 0	0 0	0 0	0 0

Oils, continued:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.
WHALE, South Sea, pale, per tun	34 10	32 0	31 10	31 0
" " " " " " " "	32 0	34 10	31 10	32 0
" " " " " " " "	29 0	30 0	29 0	30 0
" " " " " " " "	24 0	24 10	25 10	0 0
OLIVE, Galipoli, per tun	42 0	0 0	45 0	0 0
" " " " " " " "	42 0	0 0	44 0	0 0
" " " " " " " "	38 0	0 0	38 0	39 0
" " " " " " " "	37 10	38 0	37 10	38 0
" " " " " " " "	0 0	0 0	41 0	42 0
" " " " " " " "	0 0	0 0	40 0	0 0
COCONUT, Ceylon, per tun	37 10	37 15	35 0	0 0
" " " " " " " "	39 0	36 0	30 0	35 0
GROUND NUT AND GINSENG:—				
Bombay	0 0	0 0	0 0	0 0
Madras	34 0	0 0	35 15	35 0
PALM, fine	34 0	24 10	34 15	35 0
LANSRED	24 12 6	0 0	28 0	29 0
RAPESEED, English, pale	32 5	32 10	32 0	0 0
" " " " " " " "	30 5	30 10	30 0	0 0
Foreign, pale	33 0	33 10	0 0	0 0
" " " " " " " "	0 0	0 0	0 0	0 0
COTTONSEED	26 10	27 5	26 5	26 15
LARD	61 0	62 3	53 0	55 0
TALLOW	23 10	0 0	26 0	32 0
TURPENTINE, American, dks.	21 9	22 0	25 0	26 0
" " " " " " " "	0 0	0 0	29 0	0 0
PETROLEUM, Crude	0 0	0 0	0 0	0 0
refined, per gall.	0 8 1/2	0 9	0 9 1/2	0 0
Spirit	0 7 1/2	0 8	0 9	0 0
SEEDS.				
CANARY	175 0	200 0	80 0	86 0
CARAWAY, English, per cwt.	0 0	0 0	0 0	0 0
" German, &c.	25 0	46 0	0 0	0 0
CORIANDER	8 0	18 0	10 0	13 0
HEMP	36 0	42 0	40 0	44 0
LINSEED, English, per cwt.	0 0	0 0	0 0	0 0
" Black Sea & Azof	55 6	56 0	59 0	0 0
" Calcutta	59 0	60 0	62 0	0 0
" Bombay	60 0	60 0	56 0	0 0
" St. Petersburg,	0 0	0 0	56 0	57 0
Mustard, brown, per bush.	0 0	0 0	10 0	15 0
" white	7 0	12 0	8 0	11 0
Poppy, East India, per qr.	47 0	0 0	52 0	0 0
SPICES.				
CASIA LIGNEA	55 0	75 0	63 0	70 0
" Vera	24 0	50 0	24 0	60 0
" Buds	110 0	0 0	115 0	117 6
CINNAMON				
1st quality	2 9	4 6	2 4	4 0
2nd do.	2 1	3 7	2 0	3 3
3rd do.	0 0	2 10	1 6	3 0
Tallies, Java	3 0	4 0	2 0	3 0
CLOVES, Penang	1 8	1 9	2 0	0 0
Amboyia	1 3	1 5	1 4	1 5
Zanzibar	1 2	1 3	1 0	1 0
GINGER, Java, fine, per cwt.	95 0	200 10	110 0	250 0
Ord. to good	75 0	100 0	60 0	100 0
African	58 0	0 0	63 0	0 0
Bengal	48 0	55 0	55 0	0 0
Malabar	50 0	0 0	50 0	0 0
Cochin	75 0	127 6	70 0	120 0
PEPPER, B. Malabar, per lb.	0 0 1/2	0 0 1/2	0 0 1/2	0 0 1/2
Singapore	0 11	1 5	1 6	1 10
White Tallies	0 6	0 3	1 3	1 8
Cayenne	1 0	0 3	1 3	1 8
Black, 1st quality	1 0	3 7	2 0	3 3
2nd and inferior	1 7	2 11	2 11	3 3
NUTMEGS, 75 to 60 lb.	3 3	4 4	3 4	4 7
104 to 80	2 11	3 3	2 6	3 0
122 to 95	2 11	3 3	2 6	3 0
PIMENTA	0 3	0 0	0 2 1/2	0 3
VARIOUS PRODUCTS.				
CHILLI.				
Honduras, black . . per lb.	1 9	2 9	2 1	3 0
" " " " " " " "	1 8	2 0	2 1	2 4
" " " " " " " "	1 9	2 0	2 1	2 4
Mexican, black	1 8	1 10	2 2	2 4
" " " " " " " "	1 7	0 0	1 11	2 0
Teneriffe, black	1 8	3 4	2 1	3 10
" " " " " " " "	1 7	1 2	1 0	2 3
SOAP, Castile	26 0	33 0	33 0	34 0
SPONGE, Turkish, pkd. per lb.	12 0	16 12	11 0	16 0
" " " " " " " "	1 0	3 6	1 0	3 6
Ordinary	1 0	3 6	1 0	3 6
Bahama	0 6	3 0	0 6	3 0
TERRA JAPONICA.				
Gambier	25 3	25 6	24 9	0 0
Free cubes	40 0	42 0	33 0	37 0
Cutch	23 6	24 6	22 0	22 9
WOOD, Red, per ton	24 0	24 0	24 0	24 0
Brazil, Branch	18 0	27 0	20 0	26 0
" Logs	9 0	16 0	9 0	18 0
" " " " " " " "	30 0	42 0	23 0	32 0
Fustic	3 10	8 15	3 10	3 10
Jamaica	8 0	9 10	6 0	7 0
Logwood, Campeachy	9 0	0 0	9 0	9 10
Honduras	6 0	7 10	5 0	6 10
St. Domingo	6 0	6 10	5 2/6	5 10
Jamaica	6 7/6	6 10	5 0	5 10
Hula, first pile	11 0	12 0	10 10	14 0
Hula	8 0	8 2/6	7 0	8 0



CORRESPONDENTS will please observe that the Editor cannot undertake to send private replies to the class of queries which are answered in this page. He will be much obliged if readers will communicate items for this department as well as draw from it. All communications should give (in confidence) the name and address of the writer, though any *nom de plume* may be adopted. No query can be attended to in the current month which reaches this office after the 10th.

THE KEEPING OF DISTILLED WATERS.

We are favoured with the following reply to *Nesio's* query inserted last month:—

The late William Ince, of Southampton Street, Covent Garden, wrote a paper some years back on distilled waters and their preservation in a diluted state. The plan he recommended, from long personal experience, was to provide wooden tanks of requisite capacity, which were either tinned or lined with sheet zinc. They were closed by a large bung at the top, under which was a piece of coarse cloth. The bung-hole was sufficiently large to admit an ordinary mop; and once a year the tanks were scalded with boiling water, mopped out clean, and dried in the sun. The tanks themselves were kept in an underground cool cellar.

So far from these distilled waters suffering decomposition, one year's supply was made in advance, and not used until a twelvemonth old.

It was considered a misfortune when either aqua rosea or aqua sambuci had to be sold unless they had been kept a considerable time in stock.

The secret, if any, in this arrangement, consisted in the waters not being hermetically sealed (was the absence of light influential in keeping the waters?—Ed. C. & D.); it is clear that, though effectually preserved from dust and external sources of impurity, they were not excluded from the action of the atmosphere.

Many experiments were undertaken with reference to this last point. When rose or elder flower water is first prepared, there is scarcely sufficient odorous principle developed to distinguish either from fresh aqua distillata. An experienced laboratory man would be under some difficulty to decide. The development of odour requires time, accompanied by favouring circumstances. Practical observation seems to show that among these circumstances are coolness, dampness, and aeration. Certain it is, however, that when either new rose or elder flower waters are put into stoppered bottles, large or small, and so kept either in the hot pharmacy or in a damp cellar, they will be totally destitute of odorous principle, though remaining from one June to the other.

It was found that a dilute water which had not been matured as already stated, and in which the aroma was faintly perceptible, rapidly decomposed when it had to contend with the ordinary influences of the dispensing counter.

Nor was it affected more or less rapidly whether in a corked or stoppered bottle.

Amongst artificial means of preservation, spirit was found the worst. Waters containing large quantities of essential oil, or made from it, are much improved in their keeping powers by the use of powdered starch in preference to magnesia. This is added to the cold water, and the product filtered.

No medicinal water is more liable to change nor more unsightly when decomposed, than aqua pimentae. The alteration is prevented by the use of the oil, white sugar, powdered starch and aqua frigida.

Johnnie.—We have no recollection of the preparations you refer to, nor can we find traces of them by the only reasonable means we know of, that is, by turning to our advertising pages of eight or ten years back. Their non-appearance in that field probably accounts for their subsequent disappearance from the field of commerce. (2). We certainly do not think that Mr. Clarke, of Lincoln, could claim a trade-mark right in the Mosaic quotation with which he heads his advertisements.

C. R.—If the fault lies with us we apologise. We take this opportunity of saying to our correspondents that while we are anxious to be as obliging as possible, we cannot undertake to reply to all the questions that may be addressed to us. Occasionally we fear a query is laid aside for the purpose of obtaining information about it, and gets omitted altogether. If correspondents would kindly repeat their questions in such cases with a *gentle* reproof, we should feel obliged.

C. C.—So long as wax is wax, it will have a certain degree of tenacity under the same temperature. By melting it and mixing a little flour with it, it would probably be made rather more brittle, but the object has scarcely sufficient general interest to induce us to try the experiment.

T. A. B.—The preparation with your label on it would certainly be liable to medicine stamp duty.

E. E.—This correspondent misunderstood our reply to *H. G.* last month. To carry on a chemist's business in Great Britain it is necessary to be registered by the official registrar, and the Pharmaceutical Society is responsible for duly keeping the register of chemists. But this by no means involves any subscription to or membership of the Pharmaceutical Society. That course is perfectly optional. You had better get a "Pharmaceutical Calendar," price 1s., from 17 Bloomsbury Square.

J. J. A.—We have received the following in reply to a query last month:—I think your inquiring correspondent will find that *boiling* the mustard and turmeric and starchy matter will sufficiently suspend them.

W. H. C.—Will any of your readers kindly inform me the best means of destroying ants on a great breadth of ground, much infested?

J. B. asks for a good way to destroy effectually moths and ants. He has tried many things without success. *J. B.'s* ants are found in worsted heads in the cotton mills, where they make much mischief.

H. H. would be glad to know how to prevent and kill mould on materia medica specimens.

W. W. (Bt.)—Indigo-dyed blues are unaffected by sulphuric or muriatic acids, but strong nitric changes them to a clear yellow. Aniline-dyed blues are changed to green by strong acids, the blue colour being restored by washing in plenty of water. Prussian blues are also turned to green by strong acids, but are not restored by washing. Logwood blues are changed to red under similar circumstances.

Della.—Poly. Iquiritine comp. of the German Pharmacopoeia, known as *Brust pulver* or pectoral powder, is composed of powdered senna and liquorice, of each 2 parts; fennel and sulphur, of each 1 part; and white sugar, 6 parts. Tincture of larch is among the additions to the British Pharmacopoeia. We cannot spare space to reprint those formulae. Infusion of larch is not official, but it might be made by infusing $\frac{1}{2}$ oz. of the bark in 10 ozs. of water for an hour.

A. S. is much pleased with the formula published by us last month for prepared castor oil, and would like one for prepared cod liver oil. Why not follow the same method, substituting cod liver oil for castor oil?

J. W. S. would feel greatly obliged if some kind reader will furnish him with a formula for liq. opaeum comp. *vel sol.* opaeum. c. cabeb. et buchu that will not deposit or turn cloudy.

Subscriber.—There is no "office for registering patent medicines." Some people have a fancy for registering the title of their preparations at Stationers' Hall, which costs them 5s. 1d. We cannot say what direct benefit results from that expenditure.

Physic Mass.—Horse bala, however described and brought out, do not require a patent medicine stamp. The act only specifies "medicines or medicaments for the prevention, cure, or relief of any distemper, malady, ailments, disorders, or complaint incident to or in any wise affecting the human body."

H. K. N. E.—Why is it that somebody asks us for a formula for "Brilliant tine" about every six months? Here it is once more:—

Honey, 1 oz.
Glycerine, $\frac{1}{2}$ oz.
Eau de Cologne, $\frac{1}{2}$ oz.
Spirit, 2 ozs.

B. F.—The Petroleum Act (clause 9) says "Licenses may be granted for a limited time, and may be subject to renewal or not in such manner as the local authority thinks necessary."

Huddersfield.—We have communicated with the makers on the subject, and will reply to your query more definitely next month.

J. T. H.—The fly papers usually sold are unsized papers, dipped in a solution of arsenic. They can be printed according to fancy.

Spinax.—The British Pharmacopoeia names certain works where illustrations of the official plants may be found. But a new work, to be published in monthly parts, price 5s., is announced to commence on October 1 of this year, to contain colored plates of all the official and other medicinal plants. Professor Bentley and Henry Trimen, M.B., will be the authors. It will be published by Churchill.

Scrupule.—Ammoniated copper (Schonbein's liquor) will dissolve silk, but very slowly. It is made by dissolving sulphate of copper in liquid ammonia, but we are not sure of the proportions. (2.) A formula for "incense" was printed in our October number. It is the only one we have, but we are unaware of the difference between that used for the altar and that made for fumigation.